نصوص ودراسات
سلسلة يصدرها
المعهد الألماني للأبحاث الشرقية في بيروت

٢٧

علم الهيئة الإسلامي

كتاب الهيئة السنية في الهيئة السنية
لجلال الدين السيوطي

حققه وقدم له وترجمه وعلق عليه
أنطون م. هاينن

بيروت ١٩٨٢
يطلب من دار النشر فرانتس شتاينر . بقيسبادن

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عِلْمُ الْهَيْئَةِ الإِسْلامِي

نصوص ودراسات

سلسلة يصدرها
المعهد الألماني للأبحاث الشرقية في بيروت

٢٧

عِلمُ الهَيئةِ الإسلامي

كِتابُ الهَيئةِ السَّنِيَّةِ في الهَيئةِ السُّنِّيَّةِ
لجلال الدِّين السُّيُوطي

حَقَّقَهُ وَقَدَّمَ لهُ وَتَرجَمَهُ وَعَلَّقَ عَليهِ
أنطُون م. هَاين

بيروت ١٩٨٢
يُطلَبُ مِن دَار النشر فرانتس شتاينر . ڤيسبادن

المعهد الألماني للأبحاث الشرقية
بيروت، لبنان - ص.ب: ٢٩٨٨
طبع في المطبعة الكاثوليكية

مقدمة

لقد أشار جلال الدين السُّيوطي في فهرست مؤلفاته الذي ضمَّنه كتابه «التحدث بنعمة الله» إلى رسالة عنوانها «الهيئة السَنيَّة في الهيئة السُنيَّة»: [E.M. Sartain *Jalāl al-Dīn al-Suyūṭī:* II, 112, nr. 20]. هذه الرسالة لا تزال موجودة حتى الآن في العديد من المكتبات التي تحتفظ بمخطوطات من تراث العرب. وقد عُرِف السُّيوطي بسببها بين العُلماء العرب الذين اهتموا بالعُلوم الطبيعية وتناولوها بالبحث والتأليف [وقد أشار إلى ذلك H. Suter في كتابه *Die Mathematiker und Astronomen der Araber und ihre Werke* 186, nr. 449].

وبما أن هذه الرسالة لم تنل من اهتمام الدارسين ما تستحق[illegible] فقد اقتُرِح عليَّ أثناء دراستي تاريخ العُلوم الطبيعية عند العرب، أن تكون موضو[illegible] نيل الدكتوراه من جامعة هارڤارد. وبعد فراغي من أُطروحة الدكتوراه هذه، عُدت إلى مُراجعتها وأعدتُ النظر في كثير مما كتبته. ثم جمعتُ تحقيق الرسالة وترجمتُها وشروحاتِها في كتاب واحد اخترت له عنوان: «علم الهيئة الإسلامي». وهو يعكس بدقة آراء السُّيوطي في هذا الصدد.

إنّ كل مطَّلع على الأدبيات العربية في هذا الميدان يدرك تمامًا أنه من الصعوبة بمكان حصر علم الهيئة الإسلامي في مؤلَّفٍ واحدٍ، وخاصة في أيامنا الراهنة، وذلك لأن الأكثرية الساحقة من الكتب التي تتناول هذا الموضوع لا تزال صعبة المنال. وبالإضافة إلى ذلك يمكن الجزم بأن علمًا إسلاميًا واحدًا للهيئة لم يكن أبدًا حقيقةً قائمة في تاريخ الفكر الإسلامي. وذلك بسبب وجود العديد من النظريات والتخطيطات والمذاهب المتعلقة بعلم الهيئة. وحتى رسالة السُّيوطي نفسُها تبدو بشكل واضح عبارة عن مجموعة من النصوص والمقتطفات المتعددة والمتناقضة في ميدان علم الهيئة.

على أن هذه الرسالة مترتّبة على رغبة في قيام علمٍ إسلامي أوحد للهيئة ، والزعم أن هذا العلم واضح متميز ويصحّ تقديمه على هذه الصورة. ولهذا السبب ، فإن الرسالة قد انتشرت بشكل واسع لدى معاصري السُّيوطي من مفكّري الإسلام. وهي تستحق منا كل اهتمام. خاصّة أنها تُسلّط قِسطًا وافِرًا من الضوء على المسألة الشائكة المتعلقة باندماج علم الطبيعة داخل بوتقة الثقافة الإسلامية.

ولهذه الأسباب فان هذه الرسالة تخدم اهتمامات المؤرخين، على الرغم من أنها تتضمن قليلاً من المنجزات العلمية التي يجدر بالدارسين إدراجها في مجاميعهم التي تضم كل إبداع سبق أوانه، وما قدموه للعلم من إنجازات رائعة.

أما التحليلات والشروحات التي قمت بها ، فإنها تبقى ضرورية ضمن إطار الحدود التي رسمتها رسالة السُيوطي. وربما مطابقة لها تمام المطابقة ، مثل كتب الأدب والشعر، وكتب التفسير، ومجاميع الحديث، والرسائل الصوفية ، وحوارات المتكلّمين، وغير ذلك فينبغي لنا وضعه جانبًا. وعندما حاولت تتبُّع خطى السُّيوطي للوصول إلى المصادر التي استقى منها مقطوعاته في علم الهيئة ، ومن ثم التحول لتحديد مدلولها العلمي الدقيق ، تملّكني الشعور نفسُه الذي اعترى مُكتشِفَ منابع النيل [انظر الفصل ١٣ ، المقطع ٣] إذ كان شديد الرغبة في الوصول إلى أبعد لكنه قفل عائدًا. لأن عبور الأدغال المتشابكة يتطلب طاقةً وجهودًا هائلة لا قِبَلَ له بتحمُّلها.

إن كثيرين ممن كرّسوا حياتهم لخدمة العلم والمعرفة قدّموا لي مساعدات جُلَّى أثناء عبور الطريق. وإذا ما قدّمت شكري وامتناني لهم من خلال ذكر أسمائهم فإن ذلك سوف يستغرق صفحات عديدة. بيد أنه لا مندوحة عن الإشارة إلى الأساتذة في جامعة هارفارد الذين أتاحوا لي فرصة العمل معهم في أقسام تاريخ علوم ولغات وحضارات الشرق الأدنى : E.N. Hiebert, M.S. Mahdi, J.E. Murdoch, W.C. Smith, A.I. Sabra. وكان الاستاذ الأخير يقوم بدور المرشد والمشرف خلال تلك الفترة. وأنا مدين له بأنه فتح أمامي الباب واسعًا لِوُلوج هذا البحث ، كما شجّعني على متابعته وتجاوز صعابه.

وقد تلطف البروفسور A. Schimmel بقراءة المسوّدة الأولى للكتاب ، كما ساعدني في حلّ عدد من المُعضلات الطارئة .أما البروفسورة I. Lichtenstadter فقد أفسحت لي

المجال للافادة من معرفتها واطّلاعها الواسع على عصر صدر الإسلام ، كما منحتني الكثير من وقتها لتحسين لغتي الإنكليزية وتهذيبها .

وفي أثناء عملي لجمع مصادر البحث والاطّلاع على الدراسات التي سبقته ، قُدِّمت لي المساعدة القيّمة من قِبَل إدارات العديد من المكتبات التي زرتها ومن العاملين فيها على السواء . ولا بد لي في هذا الصدد من ذكر المكتبات الكبرى في استانبول ، بورْسَة وقونية ، حيث أُتيح لي المجال للاطّلاع على عدد وافر من المخطوطات . كما حصلت على أفلام من مكتبات المخطوطات في القاهرة ، دمشق ، هيدلبرغ ، كابُل ، لَيْدن ، ميُونيخ و پرنستون .

كما يجدر القول أنني مدين بالامتنان لكل من الأستاذ D. King. G. Saliba, H. Daiber, وذلك للمُلاحظات القيّمة التي أسدوها إليَّ حول هذا العمل ، وكذلك للتشجيع الذي أبدوه حيال نشر البحث وإبرازه . وأسجل عِرفاني بالجميل للبروفسور U. Haarmann المدير السابق للمعهد الألماني للأبحاث الشرقية في بيروت ، الذي وافق على نشر هذا البحث ضمن سلسلة "B.T.S." التي يصدرها المعهد المذكور . كما أشكر أيضًا Dr. G. Rotter ، المدير الحالي للمعهد ، لما لاقيته من تشجيعه أثناء الشهور الطوال الصعبة التي مرّت على لبنان وأعاقت أعمال الطباعة . وأنا مدين بالامتنان لـ Dr. B. Kellner-Heinkele ، من نفس المعهد ، التي كانت تُشرف بعناية لطيفة على تكميل الطبع . وأما أولئك الذين يعملون في المطابع الكاثوليكية فلا أعتقد أن بإمكاني إيفاءهم ما يستحقون في هذا الصدد ، حيث ظلوا مثابرين على طبع هذا البحث حتى في أدق اللحظات حرجًا وخطورة ، وهم قابعون إلى جانب خطوط التماس الملتهبة .

وَاللهُ شَكُورٌ حَلِيمٌ

بيروت ١٩٨٢ **أنطون هاينن**

بسم الله الرحمن الرحيم

الحمد لله[1] الذي علّمنا ما لم نكن نعلم. وصلّى الله على سيّدنا[2] محمّد وعلى آله وصحبه وسلّم.

وبعد[3]: هذا كتاب في علم الهيئة اقتبسته من الآثار وتتبعته[4] من الأخبار[5] ليبتهج به أولو النُهى ويعتبر[6] أولو الأبصار[5]. وسمّيته[7] بالهيئة السنية[8] في الهيئة السنّية[8]. والله أسأل حسن النية وخاتمة مرضية[9].

الباب الأوّل

ما ورد في العرش والكرسي

[١] قال الله تعالى: ﴿وَهُوَ رَبُّ الْعَرْشِ الْعَظِيمِ﴾.

[٢] وقال تعالى: ﴿وَسِعَ كُرْسِيُّهُ السَّمَاوَاتِ وَالأَرْضَ[1]﴾

[٣] أخرج ابن أبي حاتم في تفسيره وأبو الشيخ في كتاب العظمة[1] عن وهب بن منبه قال: إنّ الله تعالى خلق العرش من نوره[2] والكرسي بالعرش[2] ملتصق[3] والماء كلّه[3] في جوف الكرسي. والماء على[4] متن الريح[4]. وحول العرش أربعة أنهار: نهر[5] من نور يتلألأ ونهر من نار تتلظّى[6] ونهر من ثلج أبيض[7] تلتمع منه[7] الأبصار ونهر من ماء. والملائكة قيام في[8] تلك

الأنهار يسبّحون الله تعالى. وللعرش ألسنة بعدد ألسنة[٩] الخلق كلّهم. فهو يسبّح الله ويذكره بتلك[١٠] الألسنة.

[٤] وأخرج ابن أبي حاتم وأبو الشيخ عن سعد الطائي قال: العرش[١] ياقوتة حمراء.

[٥] وأخرج سعيد بن منصور[١] وابن أبي حاتم[١] وأبو الشيخ عن مجاهد قال: ما أخذت السماوات والأرض من العرش إلاّ كما تأخذ الحلقة من أرض[٢] الفلاة[٣].

[٦] وأخرج أبو الشيخ عن ابن عمرو قال: خلق الله أربعة أشياء بيده: آدم والعرش والقلم وجنّة عدن، وقال لسائر الخلق كن فكان[١].

[٧] وأخرج أبو الشيخ وابن أبي حاتم عن ابن عبّاس رضي الله عنهما، قال: ما يقدّر قدر[١] العرش إلاّ [٢]الّذي خلقه[٢]. [٣]وإنّ السماوات[٣] في[٤] خلق الرحمن مثل قبّة في صحراء.

[٨] وأخرج الطبراني وأبو الشيخ [١]بسند صحيح[١] عن[٢] عبدالله بن عمرو بن العاصي[٣] قال: إنّ العرش مطوّق بحيّة[٤]. والوحي ينزل في السلاسل[٥].

[٩] وأخرج أبو الشيخ عن الشعبي قال: قال رسول الله صلّى الله عليه وسلّم العرش من ياقوتة حمراء. وإنّ ملكًا من الملائكة نظر إليه وإلى عظمه[١]. فأوحى الله إليه أنّي قد جعلت فيك[٢] قوة سبعين ألف ملك، لكلّ ملك سبعون ألف جناح. فطر. فطار الملك بما فيه من القوة والأجنحة ما شاء الله أن يطير. فوقف. فنظر مكانه. لم يرم[٣].

[١٠] وأخرج عن مجاهد قال: ما موضع كرسيه من العرش إلاّ مثل حلقة في أرض فلاة.

[١١] وأخرج عن الربيع بن أنس في قوله تعالى ﴿وَالسَّقْفِ الْمَرْفُوعِ﴾. قال: هو العرش. ﴿وَالْبَحْرِ الْمَسْجُورِ﴾[١]. هو الماء الأعلى الذي[٢] تحت العرش.

[١٢] وأخرج[١] سعيد بن منصور وعبد الرزاق وابن أبي حاتم عن علي بن أبي طالب رضي الله عنه، [٢]في قوله تعالى[٢] ﴿وَالْبَحْرِ الْمَسْجُورِ﴾ قال: بحر تحت العرش.

[١٣] وأفرج ابن أبي حاتم عن كعب قال[١]: إنّ السماوات في العرش [٢]كقنديل معلّق[٢] بين السماء والأرض.

[١٤] وأخرج ابن أبي حاتم عن عمر بن يزيد البصري[١] قال: [٢]في كتاب[٢] ما[٣] تنبّأ هارون[٣] النبي عليه الصلاة[٤] والسلام، انّ بحرنا هذا خليج من نيطش، ونيطش وراءه[٥]

وهو محيط بالأرض. فالأرض وما فيها من البحار عند نيطش كعين على سيف البحر. وخلف نيطش قينس وهو[٦] محيط بالأرض. فنيطش وما دونه عنده كعين[٧] على سيف البحر. [٨]وخلف قينس[٨] الأصمّ محيط بالأرض. فقينس وما دونه عنده كعين على سيف البحر. وخلف الأصمّ المظلم محيط بالأرض. فالأصمّ وما دونه عنده كعين على سيف البحر. وخلف المظلم جبل من الماس محيط بالأرض. فالمظلم وما دونه عنده كعين على سيف البحر. وخلف الماس الباكي وهو ماء عذب محيط بالأرض. فأمر الله[٩] نصفه أن يكون تحت العرش. فأراد أن يستجمع فزجره[١٠] فهو باكي يستغفر الله. فالماس وما دونه عنده كعين على سيف البحر. [١١]والعرش خلف ذلك محيط بالأرض. فالباكي وما دونه عنده كعين على سيف البحر[١١].

[١٥] وأخرج أبو الشيخ عن حمّاد قال: خلق الله تعالى العرش من زمرّدة خضراء. وخلق له أربع[١] قوائم من ياقوتة حمراء. وخلق الله[٢] له ألف لسان. وخلق في الأرض ألف أمّة، [٣]كلّ أمة[٣] تسبّح الله بلسان من ألسن[٤] العرش.

[١٦] وأخرج أبو الشيخ وأبو نعيم في الحلية بسند واهٍ عن علي كرّم الله وجهه، قال: قال رسول الله صلّى الله عليه وسلّم، الكرسي لؤلؤة[١] [٢]والقلم لؤلؤة[٢-٣]. وطول القلم سبعمائة سنة. وطول الكرسي حيث لا يعلمه العالمون.

[١٧] وأخرج ابن أبي حاتم وأبو الشيخ عن الربيع بن أنس في قوله تعالى ﴿وَكَانَ عَرْشُهُ عَلَى الْمَاءِ﴾، قال: لمّا خلق الله السماوات والأرض قسم ذلك الماء الذي كان[١] عليه عرشه قسمين، فجعل نصفه تحت العرش. وهو البحر المسجور. فلا يقطر[٢] منه قطرة حتى ينفخ في الصور. فينزل منه[٣] مثل الطلّ. فتنبت[٤] منه الأجسام[٥]. وجعل النصف الآخر تحت الأرض السفلى.

[١٨] [١]وأخرج ابن أبي حاتم وأبو الشيخ[١] من طريق السدى عن أبي مالك قال: الكرسي تحت العرش.

[١٩] وأخرج ابن جرير وابن مردويه وأبو الشيخ عن أبي ذر رضي الله عنه، قال: قال رسول الله صلّى الله عليه وسلّم، يا أبا ذر، ما السماوات السبع في الكرسي إلاّ كحلقة ملقاة[١] في أرض فلاة. وفضل العرش على الكرسي كفضل الفلاة[٢] على تلك الحلقة.

[٢٠] وأخرج ابن جرير عن الضحّاك قال : كرسيه الذي يوضع تحت العرش الذي يجعل[١] الملوك عليه أقدامهم.

[٢١] وأخرج الفريابي[١] وابن أبي حاتم وابن المنذر والطبراني والحاكم في المستدرك وصححه على شرط الشيخين عن ابن عبّاس رضي الله عنهما ، قال : الكرسي موضع القدمين [٢]والعرش لا يقدّر أحد قدره[٢].

[٢٢] وأخرج ابن جرير وابن المنذر عن أبي موسى الأشعري قال : الكرسي موضع القدمين[٢]. وله أطيط كأطيط[١] الرحل[٢]. قلت قوله موضع القدمين استعارة وتمثيل بملوك[٣] الدنيا ، كما أوضحته رواية الضحّاك.

[٢٣] وأخرج ابن أبي حاتم وابن المنذر من طريق الضحّاك عن ابن عبّاس رضي الله عنهما ، قال : لو ان السماوات السبع والأرضين السبع بسطن ، ثم وصلن بعضهن[١] إلى بعض ، ما كن في سعة الكرسي إلاّ بمنزلة الحلقة في المفازات[٢].

[٢٤] وأخرج ابن جرير[١] وابن أبي حاتم وابن المنذر عن السدي قال : إنّ السماوات والأرض في جوف الكرسي والكرسي بين يدي العرش.

[٢٥] [١]وأخرج ابن جرير عن الضحّاك قال : كان الحسن رضي الله عنه يقول الكرسي هو العرش[٢-٣-١] ما بين العرش والسماء السابعة.

[٢٦] وأخرج أبو الشيخ من طريق مجاهد عن ابن عمرو رضي الله عنهما ، ومن طريق آخر من[١] مجاهد قال : إنّ بين العرش وبين الملائكة تسعين[٢-٣]حجابا[٤] ، حجاب من نور[٥] ، وحجاب من ظلمة ، وحجاب من نار[٦] ، [٧]وحجاب من ظلمة[٧].

[٢٧] [١]وأخرج عن مجاهد قال : بين العرش والملائكة سبعون ألف حجاب من نـور[٢-١].

[٢٨] وأخرج أبو الشيخ عن زرارة ابن أبي[١] أوفي ، انّ النبي صلّى الله عليه وسلّم ، سأل جبريل عليه السلام ، هل رأيت ربّك؟ فانتفض[٢] وقال : إنّ بيني وبينه[٣] سبعين حجابًا[٤] من نور ، لو دنوت من أدناها[٥] لاحترقت.

[٢٩] وأخرجه موصولاً[١] من حديث أنس[٢] مثله[٣].

[٣٠] وأخرج أبو الشيخ من طريق عمرو بن شعيب عن أبيه عن جده قال : احتجب الله عن [١]جميع خلقه[١] بأربع[٢] بنار وظلمة ثم بنور وظلمة ، من فوق السماوات السبع والبحر الأعلى فوق ذلك كلّه تحت العرش.

[٣١] وأخرج أبو الشيخ وابن مردويه عن سهل بن سعد قال: قال رسول الله صلّى الله عليه وسلّم، دون الله سبعون ألف حجاب من نور وظلمة، ما[١] سمع[٢] نفس شيئًا من حسن[٣] تلك الحجب[٤] إلاّ زهقت نفسه.

[٣٢] وأخرج أبو الشيخ عن القرطبي[١] قال: بلغنا أنّ بين الجبار تعالى وبين أدنى خلقه أربعة حجب، ما بين كلّ حجابين[٢] كما بين السماء والأرض حجاب من ظلمة وحجاب من نور[٣] وحجاب من ماء[٣] وحجاب من نار بيضاء.

[٣٣] وأخرج أبو الشيخ عن وهب[١] قال: بين ملائكة حملة الكرسي[٢] وبين ملائكة[٣] العرش سبعون حجابًا[٤] من ظلمة وسبعون حجابًا[٥] من البرد وسبعون حجابًا[٦] من ثلج وسبعون حجابًا[٧] من النور، غلظ[٨] كلّ حجاب منها مسيرة خمسمائة عام، وبين الحجاب إلى[٩] الحجاب مسيرة خمسمائة عام.

[٣٤] وأخرج أبو الشيخ عن ابن عبّاس قال: إنّما مثل السماوات والأرض فيما وراءهن من الهوى[١] حيث لا سماء ولا أرض كمثل فسطاط[٢] في صحراء، [٣]كم يرى[٣] ذلك [٤]الفسطاط أحد من الأرض[٤].

[٣٥] وأخرج أبو الشيخ بسند ضعيف عن ابن عبّاس رضي الله عنهما، قال: من[١] السماء السابعة إلى العرش مسيرة ستّ[٢] وثلاثين[٣] ألف عام.

[٣٦] وأخرج عبد[١] بن حميد في تفسيره وأبو الشيخ عن عكرمة قال: الشمس جزء[٢] من سبعين جزءًا[٣] من نور[٤] الكرسي، والكرسي[٤] جزء[٥] من سبعين جزءًا[٦] من نور العرش؛ والعرش جزء[٧] من سبعين جزءًا[٨] من نور[٩] الستر[١٠].

الباب الثاني

[1]ما ورد في اللوح[2] والقلم[1]

[١] قال الله تعالى ﴿في لَوْحٍ مَحْفُوظٍ﴾.

[٢] وقال تعالى ﴿نُون وَالْقَلَمِ﴾.

[٣] أخرج ابن أبي حاتم وأبو الشيخ بسند جيد[1] عن ابن عبّاس رضي الله عنهما، قال: خلق الله اللوح المحفوظ مسيرة[2] مائة عام. فقال للقلم قبل أن يخلق[3] الخلق، وهو على العرش: اكتب، فقال القلم: وما أكتب، [4]يارب[4]؟ قال: اكتب علمي في خلقي إلى يوم [5]تقوم الساعة[5]. فجرى القلم بما هو كائن [6]في علم الله[6] إلى يوم القيامة.

[٤] وأخرج أبو الشيخ من طريق مالك بن دينار عن أنس قال: قال رسول الله صلّى الله عليه وسلّم، إنّ لله لوحًا، [1]إحدى وجهيه[1] ياقوتة[2] حمراء[3]. والوجه الثاني من زمرّدة خضراء. قلمه النور فيه يخلق وفيه يرزق وفيه يحيي وفيه يميت وفيه يعز [4]وفيه[5] يذل[4] وفيه[5] يفعل ما يشاء في كلّ يوم وليلة.

[٥] وأخرج أبو الشيخ والطبراني من طريق سعيد بن جبير عن ابن عبّاس رضي الله عنهما. قال: إنّ الله خلق لوحًا من درة[1] بيضاء. دفتاه من ياقوتة حمراء. وزبرجد[2] قلمه[3] نور. وكتابه نور[4]. وعرضه ما بين السماء والأرض. ينظر فيه كلّ يوم [5]ثلاثمائة وستين[6] نظرة[5]. يخلق فيها ويرزق ويحيي ويميت ويعز ويذل ويفعل ما يشاء.

[٦] وأخرج أبو الشيخ من طريق الضحّاك عن ابن عبّاس رضي الله عنهما. قال: قال رسول الله صلّى الله عليه وسلّم. خلق الله لوحًا من درة بيضاء. دفتاه من زبرجدة خضراء[1]. كتابه نور. يلحظ إليه في كلّ يوم ثلاثمائة وستين[2] لحظة، يحيي ويميت ويخلق ويرزق ويفعل ما يشاء[3].

[٧] وأخرج ابن أبي الدنيا في مكارم الأخلاق وأبو الشيخ في كتابه العظمة والبيهقي في كتابه شعب الإيمان من طريق أبي ظلال الغسلي[1] عن أنس رضي الله عنه. قال: قال رسول الله صلّى الله عليه وسلّم. انّ لله لوحًا من زبرجدة خضراء تحت العرش، يكتب[2] فيه: إنّي أنا الله لا إله إلاّ أنا، أرحم وأترحم[3]. جعلت بضعة عشر وثلاثمائة خلق، من جاء بخلق منها مع شهادة انّ لا إله إلاّ الله دخل الجنّة.

[٨] وأخرج[١]أبو الشيخ في العظمة[١] والبيهقي في الشعب[٢] عن أبي سعيد الخدري رضي الله عنه ، قال : قال [٣]رسول الله[٣] صلّى الله عليه وسلّم ، انّ بين يدي الله لوحًا فيه ثلاثمائة وخمس عشر شريعة ، يقول الرحمن وعزتي وجلالي لا يأتيني عبد من عبادي ما لم يشرك بواحده[٥] منهن إلاّ أدخلته الجنّة.

[٩] وأخرج ابن جرير وأبو الشيخ في تفسيره عن جبير [١]بن نغير[١] قال : إنّ الله كان[٢] عرشه على الماء ، وإنّه خلق القلم فكتب به ما هو خالق وما هو كائن من خلقه . ثم انّ ذلك[٣] الكتاب سبّح الله تعالى ومجّده ألف عام قبل أن يخلق شيئا من الخلق.

[١٠] وأخرج أبو يعلى بسند حسن عن ابن عبّاس رضي الله عنهما ، إنّ رسول الله صلّى الله عليه وسلّم ، قال : انّ أوّل شيء خلقه الله تعالى القلم ، وأمره أن يكتب كلّ شيء.

[١١] وأخرج الطبراني بسند حسن عن ابن عبّاس رضي الله عنهما . عن النبي صلّى الله عليه وسلّم ، قال : لما خلق الله القلم قال له : أكتب . فجرى بما[١] هو كائن إلى [٢]قيام الساعة[٢].

[١٢] وأخرج الطبراني عن ابن عبّاس رضي الله عنهما ، قال : انّ الله خلق العرش ، فاستوى عليه . ثم خلق القلم ، فأمره أن يجري بإذنه . وعظم[١] القلم ما بين السماء والأرض . فقال القلم بما أجري يا ربّ؟ قال : بما أنا خالق وكائن في خلقي من قطر أو نبات أو نفس[٢] أو أثر ، يعني به العمل أو رزق أو أجل . فجرى القلم بما هو كائن إلى يوم القيامة . فأثبته الله في الكتاب المكنون عنده تحت العرش.

[١٣] وأخرج أبو الشيخ عن ابن عمرو رضي الله عنهما ، عن النبي صلّى الله عليه وسلّم ، قال : انّ الله تعالى أوّل شيء خلقه[١] خلق القلم ، وهو من[٢] نور[٣] ، مسيرة[٤] خمسمائة عام . فأمره[٥-٦] ، فجرى[٧] بما هو كائن إلى يوم القيامة . فصدّقوا كلّ ما بلّغتم [٨] عن الله من[٩] قدرته.

[١٤] وأخرج عن مجاهد قال : خلق الله اليراع أوّل ما خلق من الأشياء ، واليراع القصب . ثم خلق القلم من ذلك اليراع . ثم قال : أكتب ما يكون إلى يوم القيامة.

[١٥] وأخرج بسند[١] واهٍ عن ابن عبّاس رضي الله عنهما ، قال : [٢]أوّل شيء[٢] خلق الله [٣]تعالى العرش من نور . ثم الكرسي . ثم لوحًا محفوظًا[٣] من درة بيضاء دفتاه من ياقوتة

حمراء ، قلمه[٤] نور وكتابه نور. ينظر الله فيه كلّ يوم ثلاثمائة وستين نظرة . يخلق[٥] في كلّ نظرة ويحيي ويميت ويعز ويذل ويرفع أقوامًا ويخفض[٦] أقوامًا . وخلق قلمًا من نور طوله خمسمائة عام ، وعرضه خمسمائة عام . فقال له[٧] : أكتب . قال : ما أكتب[٨]؟ قال[٩] : علمي في خلقي إلى [١٠]أن تقوم الساعة[١٠] . وسنة[١١] القلم مشقوقة ينبع منه[١٢] المداد .

الباب الثالث

ما ورد في السماوات السبع والأرضين[١] السبع[٢]

[١] قال الله تعالى : ﴿[١]اَللهُ الَّذِي[١] خَلَقَ سَبْعَ سَمَاوَاتٍ وَمِنَ الأَرضِ مِثْلَهُنَّ﴾ .

[٢] وأخرج ابن راهويه[١] في مسنده وأبو الشيخ والبزار[٢] بسند صحيح عن أبي ذر[٣] قال : قال رسول الله صلّى الله عليه وسلّم ، ما بين السماء والأرض مسيرة خمسمائة عام ، وغلظ كلّ سماء مسيرة خمسمائة عام ،[٤] وما بين السماء إلى التي تليها مسيرة خمسمائة عام[٤] ، كذلك إلى السماء السابعة.[٥] والأرضون[٦] مثل ذلك . وما بين السماء السابعة[٥] إلى العرش مثل جميع ذلك .

[٣] وأخرج أبو الشيخ عن أبي الدرداء رضي الله عنه ، قال : قال رسول الله صلّى الله عليه وسلّم ، كثف[١] الأرض مسيرة[٢] خمسمائة عام ، وكثف[٣] الثانية مثل ذلك ، وما بين كلّ أرضين مثل ذلك . ثم ذكر معناه .

[٤] وأخرج أحمد [١]بن حنبل رضي الله عنه[١] ، في مسنده وأبو داود والترمذي[٢] وحسنه[٣] وابن ماجة[٤] وابن أبي عاصم في السنة[٥] وأبو يعلى وابن خزيمة والطبراني [٦]والحاكم وصححه[٦] أبو الشيخ[٤] عن العبّاس بن عبد المطلب[٧] قال : كنّا عند النبي صلّى الله عليه وسلّم ، فقال : أتدرون كم بين السماء والأرض؟ قلنا : الله ورسول أعلم . قال : بينها مسيرة خمسمائة سنة[٧] . ومن[٨-٩] كلّ سماء إلى سماء مسيرة[١٠] خمسمائة سنة[١١-٩] . وكثف[١٢] كلّ سماء[١٣] خمسمائة سنة وفوق السماء السابعة بحر بين أعلاه وأسفله كما بين السماء والأرض ، ثم[١٤] فوق[١٥] ذلك [١٦]ثمانية أوعال[١٧] بين ركبهن وأظلافهن كما بين السماء والأرض ، ثم فوق ذلك[١٦] . العرش بين أسفله وأعلاه كما بين السماء والأرض ، ثم الله سبحانه وتعالى فوق ذلك[١٨] .

[٥] وأخرج الترمذي وابن مردويه وأبو الشيخ عن أبي هريرة رضي الله عنه ، قال : كنّا جلوسًا مع رسول الله صلّى الله عليه وسلّم ، فمرّت بنا[١] سحابة. فقال : أتدرون ما هذه؟ قالوا : الله ورسوله أعلم. قال : هذه الغيابة[٢-٣] ، وهذه روايا الأرض يسوقها الله إلى أهل بلد لا يعبدونه ولا يشكرونه. هل تدرون ما فوق ذلك ؟ قالوا : الله ورسوله أعلم. قال : فإنّ[٤] فوق ذلك موج مكفوفة وسقف محفوظ. وهل تدرون ما فوق ذلك؟ قالوا : الله ورسوله أعلم. قال : فإنّ فوق ذلك سماء[٥]. [٦]هل تدرون ما فوق ذلك؟ قالوا : الله ورسوله أعلم. قال : فإنّ فوق ذلك سماء[٦] أخرى. هل تدرون ما بينهما؟ قالوا : الله ورسوله أعلم. قال : فإنّ بينهما مسيرة[٧] خمسمائة عام ، حتى عدّ سبع سماوات[٨] بين كلّ سمائين مسيرة[٩] خمسمائة عام. ثم[١٠] قال : هل تدرون ما فوق ذلك؟ قالوا : الله ورسوله أعلم. قال : فإنّ فوق ذلك العرش[١١]. فهل تدرون كم بينهما ؟ قالوا : الله ورسوله أعلم. قال[١٢] : فإنّ بين ذلك كما بين السمائين أو كما قال : ثم قال : هل تدرون ما هذه ، هذه[١٣] الأرض ؟ هل تدرون ما تحتها؟ قالوا : الله ورسوله أعلم. قال[١٤] : أرض أخرى ، وبينهما مسيرة خمسمائة عام ، حتى عدّ سبع أرضين بين كلّ أرضين مسيرة خمسمائة عام.

[٦] وأخرج ابن أبي حاتم وأبو الشيخ عن كعب قال : إنّ الله خلق سبع سماوات ، ومن الأرض مثلهن. وجعل ما بين كلّ سمائين كما بين السماء الدنيا[١] والأرض. [٢]وجعل كثفها[٣-٢] مثل ذلك. [٤]وجعل ما بين كلّ أرضين كما بين السماء الدنيا[٥] والأرض ، وكثف[٦] كلّ أرض مثل ذلك. وكان العرش على الماء. [٧]فرفع الماء[٧] حتى جعل عليه العرش. ثم ذهب بالماء حتى جعله تحت الأرض السابعة[٤].

[٧] وأخرج ابن المنذر في تفسيره وعثمان[١] بن سعيد[٢] الدارمي في كتاب الردّ على الجهمية وأبو الشيخ عن ابن مسعود رضي الله عنه ، قال : ما بين السماء والأرض مسيرة خمسمائة عام ، وما بين كلّ سمائين خمسمائة عام. [٣]وبصره[٤] كلّ سماء وأرض يعني غلظ ذلك مسيرة خمسمائة عام[٣]. وما بين السماء[٥] السابعة إلى الكرسي مسيرة خمسمائة عام. وما بين الكرسي والماء مسيرة خمسمائة عام[٦]. والعرش على الماء. والله[٧] فوق العرش. وهو يعلم ما أنتم عليه.

[٨] وأخرج ابن جرير وابن المنذر عن ابن مسعود وناس من الصحابة قالوا[١] : انّ الله تعالى كان عرشه على الماء[٢] ، لم يخلق شيئًا غير ما خلق[٣] قبل الماء. فلما[٤] أراد أن يخلق

الخلق أخرج من الماء دخانًا ، فارتفع فوق الماء فسما[٥] عليه فسمّاه[٦] سماء . ثم أيبس الماء ، فجعله أرضًا واحدة . ثم فتقها ، فجعلها سبع[٧] أرضين في يومين الأحد والإثنين . فخلق الأرض على[٨] حوت ، وهو[٩] الذي ذكره في قوله تعالى ﴿ نُون وَالْقَلَم ﴾ . والحوت في الماء . والماء على ظهر [١٠]صفاة . والصفاة[١٠] على ظهر ملك . والملك على صخرة . والصخرة[١١] في الريح . وهي الصخرة التي ذكرها[١٢] لقمان عليه السلام ، ليست في السماء ولا في الأرض . فتحرك الحوت ، فاضطرب ، فتزلزلت الأرض . فأرسى عليها الجبال ، فقرت وخلق الجبال فيها وأقوات[١٣] أهلها وشجرها[١٤] وما ينبغي لها في يومين الثلاثاء والأربعاء . ثم استوى إلى السماء ، وهي دخان . وذلك الدخان من[١٥] تنفس الماء حين تنفس ، فجعلها سماء واحدة . ثم فتقها فجعلها سبع سماوات في يومين ، الخميس والجمعة . وإنّما سمّى يوم الجمعة لأنّه جمع فيه خلق السماوات والأرض . وأوحى في كلّ سماء أمرها . قال : ثم[١٦] خلق في كلّ سماء خلقها من الملائكة . والخلق الذي فيها من البحار وجبال البرد ، وما لا يعلم . ثم زيّن السماء[١٧] الدنيا بالكواكب[١٨] . فجعلها زينة وحفظًا [١٩]من الشياطين[١٩] .

[٩] وأخرج أبو الشيخ عن سعيد بن جبير في قوله تعالى ﴿ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا ﴾ ، قال : كانت السماوات والأرضون[١] ملترقتين[٢] . فرفع السماء وابتداءها من الأرض . فكان[٣] فتقها[٤] .

[١٠] وأخرج أبو الشيخ عن مجاهد في قوله تعالى ﴿ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا ﴾ . قال[١] : من الأرضين[٢] ستّ[٣] ، فتلك سبع . ومن السماء ستّ[٤] ، فتلك سبع .

[١١] وأخرج عن[١] اياس ابن معاوية قال : السماء مُقَبَّبة على الأرض مثل القبّة .

[١٢] وأخرج عبد بن حميد وأبو الشيخ عن وهب قال : شيء من أطراف السماء[١] محدق بالأرضين[٢] والبحار كأطناب الفسطاط .

[١٣] وأخرج ابن أبي حاتم عن جبير بن مطعم إنّ النبي صلّى الله عليه وسلّم ، قال : إنّ الله على عرشه ، وعرشه على سماواته ، وسماواته على أرضه[١] هكذا . وقال بإصبعه[٢] مثل القبّة .

[١٤] وأخرج ابن أبي حاتم عن السدي في قوله سبحانه ﴿ وَالسَّمَاءَ بِنَاءً ﴾ ، قال : بناء السماء على الأرض كهيئة القبّة . وهي سقف على الأرض .

[١٥] وأخرج ابن جرير عن ابن مسعود وناس من الصحابة في قوله تعالى ﴿ وَالسَّمَاءَ بِنَاءً ﴾[١]، قال: سقف على الأرض كهيئة القبّة.

[١٦] وأخرج ابن أبي حاتم عن القاسم[١] بن أبي بزة[٢] قال: ليست السماء مربّعة ولكنها مقبوّة[٣] يراها[٤] الناس خضراء.

[١٧] وأخرج ابن أبي حاتم وأبو الشيخ عن ابن عبّاس قال: قال[١] رجل: يا رسول الله، ما هذا السماء؟ قال: هذا موج مكفوف عنكم.

[١٨] وأخرج راهويه[١] في مسنده والطبراني [٢]في الأوسط[٢] وابن أبي حاتم[٣] وأبو الشيخ وابن المنذر[٤] عن الربيع بن أنس قال: السماء[٥] الدنيا موج مكفوف[٦]، والثانية مرمرة[٧] بيضاء، والثالثة حديد، والرابعة نحاس، والخامسة فضة، والسادسة ذهب، والسابعة ياقوتة حمراء. [٨]زاد ابن أبي حاتم[٨]: وما فوق ذلك صحارى[٩] من نور، ولا[١٠] يعلم ما فوق ذلك إلاّ الله سبحانه وملك موكل بالحجب يقال له ميطاطروس[١١].

[١٩] وأخرج أبو الشيخ بسند [١]واهٍ جدًا[١] عن سلمان الفارسي رضي الله عنه قال: سماء الدنيا من زمردة خضراء، واسمها[٢] رقيعا[٣]. والثانية من فضة بيضاء، واسمها أرقلون[٤]. والثالثة من ياقوتة حمراء، واسمها قيدوم. والرابعة من درة[٥] بيضاء، واسمها ماعونا[٦]. والخامسة من ذهب[٧] حمراء، واسمها ديعا[٨]. والسادسة من ياقوتة خضراء، واسمها دقنا[٩]. والسابعة من نور، واسمها عريبا.

[٢٠] وأخرج ابن أبي حاتم عن الشعبي قال: كتب ابن عبّاس رضي الله عنهما، إلى أبي الجلد يسأله عن السماء من أيّ شيء هي[١]؟ [٢]فكتب إليه[٢]: [٣]إنّ السماء[٣] من موج مكفوف.

[٢١] وأخرج ابن أبي حاتم عن حبة العرني[١] قال: سمعت عليًا رضي الله عنه، ذات يوم يحلف[٢] والذي خلق السماء من دخان وماء[٣].

[٢٢] وأخرج ابن أبي حاتم والشيخ عن كعب قال: السماء أشد بياضًا من اللبن.

[٢٣] وأخرج عبدالرزاق وابن أبي حاتم عن سفيان الثوري قال: صخرة تحت الأرضين بلغنا انّ تلك الصخرة منها خضرة السماء[١].

[٢٤] وأخرج أبو الشيخ عن ابن عبّاس[١] في قوله تعالى ﴿وَالسَّمَاءِ ذَاتِ الحُبُكِ﴾، قال: ذات البهاء والجمال. وإنّ بيانها[٢] كالبرد المسلسل.

[٢٥] وأخرج عن الحسن في الآية، قال: ذات الخلق الحسن[١] محبكة بالنجوم.

[٢٦] وأخرج عن أبي صالح في الآية، قال: ذات الخلق الشديد.

[٢٧] وأخرج عن ابن عمرو رضي الله عنهما، قال: والسماء[١] ذات الحبك السماء السابعة.

[٢٨] وأخرج عن علي [١]بن أبي طالب[١] كرّم الله وجهه، قال: اسم السماء الدنيا رقيع. واسم السماء[٢] السابعة الصراح[٣].

[٢٩] وأخرج عن عثمان[١] بن سعيد الدارمي في كتاب الردّ على الجهمية عن عبدالله بن عمرو[٢] قال: لما أراد الله تعالى أن يخلق الأشياء إذ كان عرشه على الماء وإذ [٣]لا أرض[٣] ولا سماء، خلق الريح، فسلّطها على الماء حتى اضطربت أمواجه وأثار ركامه. فأخرج من الماء دخانًا [٤]وطينًا وزبدًا. فأمر الدخان[٤]، فعلا وسما ونما. فخلق منه السماوات، وخلق من[٥] الطين الأرضين، وخلق من الزبد الجبال.

[٣٠] وأخرج أبوالشيخ عن عبدالله بن سلام قال: خلق الله السماوات يوم الخميس والجمعة. وأوحى في كلّ سماء أمرها.

[٣١] وأخرج عبدالرزاق [١]وعبد بن حميد[١] وابن جرير وابن أبي حاتم وأبوالشيخ عن مجاهد قال: خلق الله الأرض قبل السماء. فلما خلقت، [٢]ثار منها[٢] دخان[٣]. فذلك قوله تعالى ﴿ثُمَّ اسْتَوَى إِلَى السَّمَاءِ، وَهِيَ دُخَانٌ﴾. فسواهن[٤] سبع سماوات بعضهن[٥] فوق بعض، وسبع أرضين [٦]بعضهن تحت[٦] بعض.

[٣٢] وأخرج أبوالشيخ عن حسّان[١] بن عطية قال: الأرض التي[٢] تحت هذه، فيها حجارة أهل النار. والتي تليها[٣]، فيها[٤] الريح العقيم. والتي تليها، فيها[٥] عقارب أهل النار. والتي تليها، فيها[٦] حيات أهل النار. والتي تليها فيها إبليس الأبالسة.

[٣٣] وأخرج عن الديناري[١] قال: الريح العقيم في الأرض الثانية، والثالثة فيها حجارة[٢] النار، والرابعة فيها عقارب النار، والخامسة فيها حيات النار، والسادسة فيها كبريت النار، والسابعة فيها إبليس.

[٣٤] وأخرج أبو الشيخ عن مجاهد قال: سجّين صخرة تحت الأرض السابعة[١] [٢]في جهنّم[٢]، تقلب، فيجعل كتاب الفاجر[٣] تحتها[٤].

[٣٥] وأخرج الحاكم في المستدرك عن ابن عمرو مرفوعًا، قال: الأرض الرابعة فيها كبريت جهنّم، والخامسة فيها حيات جهنّم، السادسة فيها[١] عقارب جهنّم.

[٣٦] وأخرج ابن أبي حاتم والحاكم عن عبيد[١] الله بن عمر رضي الله عنهما، قال: قال رسول الله صلّى الله عليه وسلّم، انّ الأرضين بين كلّ أرض والتي تليها مسيرة خمسمائة عام. [٢]والعليا على ظهر[٢] حوت قد التقى طرفاه في السماء والحوت على صخرة، والصخر[٣] بيد الملك. والثانية سجن الريح. والثالثة فيها حجارة جهنّم. والرابعة فيها كبريت جهنّم. والخامسة فيها حيات جهنّم. والسادسة فيها عقارب جهنّم. والسابعة فيها سقر، وفيها[٤] إبليس [٥]يصفد بالحديد[٥] يد أمامه[٦] ويد خلفه. [٧]فإذا أراد الله أن يطلقه لما يشاء أطلقه[٧].

[٣٧] وأخرج أبو الشيخ عن ابن عمرو قال: إنّ على الأرض الرابعة وتحت الأرض[١] الثالثة من الجنّ، ما لو انّهم[٢] ظهروا لكم، لم تروا[٣] معهم نور الشمس، [٤]على كلّ[٤] زاوية منها خاتم من خواتم الله جل وعلا، وعلى كلّ خاتم ملك من الملائكة يبعث الله إليه[٥] كلّ يوم ملكًا[٦] من عنده أن احتفظ بما عندك.

[٣٨] وأخرج [١]البزار وابن[١] عدي وأبو الشيخ عن [٢]ابن عمرو[٢] رضي الله عنهما، إنّ النبي صلّى الله عليه وسلّم، سُئِلَ عن الأرض، على ما هي[٣]؟ قال: على الماء. قيل[٤]: أرأيت الماء، على ما هو؟ قال: على صخرة خضراء. قيل: أرأيت الصخرة، على ما هي[٥]؟ قال: على[٦] ظهر حوت يلتقي طرفاه بالعرش. قيل[٧]: أرأيت الحوت، على ما هو؟ قال: على كاهل ملك قدماه في الهواء[٨].

[٣٩] وأخرج أبو الشيخ عن كعب قال: الأرضون السبع على صخرة، والصخرة في[١] كفّ[٢] ملك، والملك[٣] على جناح الحوت، والحوت في[٤] الماء، والماء على الريح، والريح على الهوى[٥]، ريح عقيم لا تلقح. وإنّ قرونها معلقة بالعرش.

[٤٠] وأخرج ابن أبي حاتم عن السدي في قوله تعالى ﴿في صَخْرَةٍ﴾، قال[١]: هذه الصخرة ليست في السماوات[٢] ولا في الأرض، هي تحت سبع[٣] أرضين عليها ملك قائم.

[٤١] وأخرج ابن أبي حاتم وأبو الشيخ من طريق السدي عن [١]ابي مالك قال: الصخرة التي تحت الأرض منتهى الخلق على[٢] أرجائها أربعة أملاك، ورؤوسهم تحت العرش.

[٤٢] وأخرج أبو الشيخ عن أبي[١] مالك قال: انّ الأرضين على حوت، والسلسة في أذن[٢] الحوت.

[٤٣] وأخرج ابن أبي حاتم عن كعب: انّه سُئِل ما تحت هذه الأرض؟ قال:[١] الماء. قيل: وما تحت الماء؟ قال: الأرض. قيل: وما تحت الأرض؟ قال: الماء.[٢]قيل: وما تحت الماء؟ قال: الأرض. [٣]قيل: وما تحت الأرض؟[٤]قال: الماء. قيل: وما تحت الماء؟ قال: الأرض. قيل: وما تحت الأرض[٢-٤]؟ قال[١-٣]: صخرة. قيل: وما تحت الصخرة؟ قال[٥]: ملك. قيل: وما تحت الملك؟ قال: حوت معلق طرفاه بالعرش. قيل: فما تحت الحوت؟ قال: الهوى[٦] والظلمة[٧] وانقطع العلم.

[٤٤] وأخرج ابن أبي حاتم عن عطية العوفي في قوله تعالى ﴿فَتَكُنْ في صَخْرَةٍ﴾، قال: هي صخرة خضراء مربعة تحت الأرض[١]. قيل:[٢] فما عليها؟ قال: الماء. قيل[٢]: فما على الماء؟ قال[٣]: الحوت. قيل: فما على الحوت؟ قال: الأرضون. قيل: الصخرة على أيّ شيء هي؟ قال: على قرن الثور. قيل: الثور، على أيّ شيء هو[٤]؟ قال: على الثرى.

[٤٥] وأخرج ابن أبي حاتم عن الربيع بن[١] أنس في قوله تعالى ﴿فَتَكُنْ في صَخْرَةٍ﴾، قال: هي الصخرة التي تحت[٢] الأرضين[٣] السفلى.

[٤٦] وأخرج ابن جرير وابن أبي حاتم عن عبدالله بن الحارث[١] قال: الصخرة صخرة خضراء على ظهر الحوت.

[٤٧] وأخرج أبو الشيخ عن وهب في قوله تعالى ﴿في[١] يَوْمٍ كَانَ[٢] مِقْدَارُهُ خَمْسِينَ أَلْفَ سَنَةٍ﴾. قال: هي ما بين أسفل الأرض إلى العرش.

[٤٨] وأخرج أبوالشيخ عن[١] عبدة[٢] ابن أبي لُبابة قال: الدنيا سبعة أقاليم. فياجوج وماجوج في ستّة[٣] أقاليم. وسائر الناس في إقليم واحد.

[٤٩] وأخرج عثمان بن[١] سعيد الدارمي[٢] في كتاب الردّ على الجهمية[٢] عن ابن عبّاس رضي الله عنهما. قال: سيّد السماوات السماء[٣] التي فيها العرش.[٤] وسيّد الأرضين[٥] التي نحن عليها.

[٥٠] وأخرج ابن المنذر عن ابن عبّاس رضي الله عنهما، قال: أفضل[١] السماوات السماء التي فيها العرش[٤]. وأفضل الأرضين الأرض التي أنتم عليها. وإنّ أفضل الشجر العوسج. [٢]ومنه عصا[٢] موسى [٣]عليه السلام[٤] [٣].

الباب الرابع

ما ورد في الشمس والقمر والنجوم[١]

[١] قال الله سبحانه : ﴿وَجَعَلَ الْقَمَرَ[١] فِيهِنَّ نُورًا ، وَجَعَلَ الشَّمْسَ سِرَاجًا﴾ .

[٢] وقال تعالى : ﴿وَسَخَّرَ لَكُمُ الشَّمْسَ وَالْقَمَرَ[١] دَائِبَيْنِ﴾ .

[٣] وقال [١]تعالى : ﴿وَهُوَ[١] الَّذِي جَعَلَ لَكُمُ النُّجُومَ لِتَهْتَدُوا بِهَا فِي ظُلُمَاتِ[٢] الْبَرِّ وَالْبَحْرِ﴾ .

[٤] وقال عز وجل : ﴿إِنَّا زَيَّنَّا السَّمَاءَ الدُّنْيَا بِزِينَةٍ الْكَوَاكِبِ وَحِفْظًا[١] مِنْ كُلِّ شَيْطَانٍ مَارِدٍ﴾ .

[٥] وأخرج الطبراني في الأوسط [١]وأبو الشيخ[١] وابن مردويه عن أنس قال : حدثني رسول الله صلّى الله عليه وسلّم ، انّ الشمس والقمر والنجوم خلقن[٢] من نور العرش .

[٦] وأخرج ابن أبي حاتم وأبو الشيخ عن كعب قال : خلق الله القمر من نور الأثرى . إنّه قال : ﴿وَجَعَلَ الْقَمَرَ [١]فِيهِنَّ نُورًا﴾ . وخلق الشمس من نار[٢] الأثرى . إنّه قال : ﴿وَجَعَلَ الشَّمْسَ[١] سِرَاجًا﴾ . والسراج لا يكون إلاّ من نار[٣] .

[٧] وأخرج ابو الشيخ عن معاوية بن صالح[١] : انّه بلغه أن النيران أربع : فنار تأكل وتشرب ، وهي نار جهنّم . ونار لا تأكل ولا تشرب ، وهي نار الدنيا . ونار تأكل ولا تشرب ، وهي النار التي خلقت منها[٢] الملائكة[٣] . ونار تشرب ولا تأكل ، وهي النار التي خلقت منها الشمس والشياطين .

[٨] وأخرج ابن مردويه وابن عساكر وأبو الشيخ عن ابن عمرو[١] قال : إنّ الشمس والقمر وجوههما إلى السماء وقفاهما إلى الأرض . يضيّيان من[٢] في السماء كما يضيّيان من[٣] في الأرض .

[٩] وأخرج أبو الشيخ بسند حسن عن ابن عبّاس في قوله تعالى ﴿وَجَعَلَ الْقَمَرَ فِيهِنَّ نُورًا﴾ ، قال : قفاه مما يلي الأرض ، ووجهه مما يلي[١] السماء .

[١٠] وأخرج الديلمي عن ابن عمرو قال : قال رسول الله صلّى الله عليه وسلّم ، الشمس والقمر وجوههما إلى العرش وأقفاءهما[١] إلى الناس .

[١١] وأخرج أبو الشيخ عن ابن شوذب[1] قال : الشمس جزء من ثلاثة آلاف[2] جزء من نور تحت العرش[3-4].

[١٢] وأخرج عن سلمان الفارسي[1] قال : خلق الله الشمس من نور عرشه وكتب في وجهها[2] إنّي أنا الله لا إله إلاّ أنا ، صنعت الشمس بقدرتي ، وأجريتها بأمري . وكتب في بطنها إنّي أنا الله لا إله إلاّ أنا . رضاني كلام ، وغضبي كلام ، ورحمتي كلام ، وعذابي كلام . وخلق القمر من نور حجابة الذي يليه[3] . وكتب في وجهه إنّي أنا الله لا إله إلاّ أنا ، صنعت القمر ، وخلقت الظلمات[4] والنور ، [5]فالظلمات ضلالتي[5] ، والنور هداي[6] ، أضل من شئت وأهدي من شئت . وكتب في بطنه إنّي أنا الله لا إله إلاّ أنا ، خلقت الخير والشر بقدرتي وعزتي[7] ، أبتلي بهما[8] من شئت من خلقي .

[١٣] وأخرج أبو الشيخ من طريق الكلبي عن أبي صالح عن ابن عبّاس رضي الله عنهما ، إنّ رجلاً قال له : كم طول الشمس وكم عرضها؟ قال : تسعمائة فرسخ [1]في تسعمائة فرسخ[1] ، وطول الكواكب اثني عشر فرسخاً [2]في اثني عشر فرسخاً[2] .

[١٤] وأخرج ابن أبي حاتم وأبو الشيخ عن قتادة قال : الشمس طولها[1] ثمانون فرسخاً في[2] ثمانين فرسخاً .

[١٥] وأخرج ابن أبي حاتم وأبو الشيخ عن عكرمة قال : الشمس على قدر الدنيا ، [1]وزيادة ثلث . والقمر[2] على قدر الدنيا[1] .

[١٦] وأخرجه من وجه آخر بلفظ سعة الأرض بدل قدر[1] الدنيا في الموضعين .

[١٧] وأخرج ابن أبي حاتم وأبو الشيخ عن ابن عبّاس رضي الله عنهما ، قال : الشمس بمنزلة الساقية تجري [1]بالنهار في السماء[1] في فلكها . فإذا غربت ، جرت[2] بالليل[3] في فلكها تحت الأرض حتى تطلع من مشرقها . وكذلك القمر .

[١٨] وأخرج أبو الشيخ عن ابن عبّاس في قوله تعالى ﴿ وَكُلٌّ فِي فَلَكٍ يَسْبَحُونَ ﴾ ، قال : تدور[1] [2]في أبواب السماء كما تدور[2] الفلكة في المغزل .

[١٩] وأخرج أبو الشيخ عن الحسن البصري[1] رحمه الله ، قال : إذا غربت الشمس ،

دارت في فلك السماء مما يلي[٢] دبر القبلة حتى ترجع إلى المشرق الذي تطلع منه ، وتجري في السماء من مشرقها إلى مغربها . ثم ترجع إلى الأفق مما يلي دبر القبلة إلى مشرقها . كذلك هي مسخرة في فلكها ، وكذلك القمر .

[٢٠] وأخرج ابن أبي حاتم وأبو الشيخ عن حسان بن عطية قال : الشمس والقمر والنجوم مسخرات[١] في فلك بين السماء والأرض تدور[٢] .

[٢١] وأخرج البخاري في تأريخه وأبو الشيخ وابن عساكر عن كعب قال : إذا أراد الله أن يطلع الشمس من مغربها ، أدارها بالقطب ، فجعل مشرقها مغربها ، ومغربها مشرقها .

[٢٢] وأخرج ابن أبي حاتم وأبو الشيخ عن ابن عمرو رضي الله عنهما ، قال : لو أنّ الشمس تجري مجرى واحدًا ، ما انتفع أحد من أهل الأرض بشيء منها ، ولكنّها تحلّق في الصيف وتعترض في الشتاء . فلو أنّها طلعت مطلعها في الشتاء في[١] الصيف ، [٢]لانضجهم الحر[٢] . ولو أنّها طلعت مطلعها في الصيف في الشتاء ، لقطعهم[٣] البرد .

[٢٣] وأخرج ابن أبي حاتم وأبو الشيخ عن عكرمة قال : إنّ الشمس إذا غربت ، دخلت بحرًا تحت العرش ، فتسبّح الله سبحانه [١]حتى إذا[١] هي أصبحت ، استعفت[٢] ربّها من[٣] الخروج . [٤]قال : ولم ؟ قالت[٤] : إنّي إذا خرجت ، عبدت من دونك [٥]يا رب[٥] . قال لها[٦] : أخرجي ، فليس عليك من [٧]ذلك شيء[٧] ، حسبهم جهنّم .

[٢٤] وأخرج عبد الرزاق وأبو الشيخ عن ابن عمرو قال : إنّ الشمس تطلع ، فيردها[١] ذنوب[٢] بني آدم . فإذا غربت ، سلمت وسجدت . [٣]فاستأذنت ، فيؤذنون[٤] لها حتى إذا غربت ، سلمت وسجدت[٣] . فلا يؤذن لها ، فتجلس[٥] ما شاء الله . ثم يقال لها : أطلعي من حيث غربت .

[٢٥] وأخرج ابن أبي شيبة وابن المنذر وأبو الشيخ [١]من طريقين[١] عن سعيد بن المسيب رضي الله عنهم . قال : لا تطلع الشمس حتى ينخسها ثلاثمائة وستون ملكًا[٢] كراهية أن تعبد من دون الله .

[٢٦] وأخرج ابن المنذر عن عكرمة قال : ما طلعت الشمس[١] حتى يوتر[٢] لها كما يوتر[٣] القوس .

[٢٧] وأخرج الطبراني وأبو الشيخ وابن مردويه عن أبي أمامة الباهلي رضي الله عنه، قال: قال رسول الله صلّى الله عليه وسلّم، وكل بالشمس سبعة أملاك، يرمونها بالثلج كلّ يوم، ولولا ذلك، ما أصابت شيئًا[١] إلاّ أحرقته.

[٢٨] وأخرج ابن أبي حاتم وأبو الشيخ عن علي بن أبي طالب رضي الله عنه، قال: إنّ الشمس إذا طلعت هتف معها[١] ما كان موكلان[١] بها يجريان[٢] معها ما جرت حتى إذا وقعت[٣] في قطبها حذاء[٤] بطنان العرش، خرّت ساجدة[٥] حتى يقال لها[٦]: إمضي[٧]، فتمضي بقدرة الله عز وجل. وإذا طلعت، أضاء وجهها لسبع[٨] سماوات وقفاها لأهل الأرض. وفي السماء[٩] [١٠]ستون وثلاثمائة برج،[١١] كلّ برج[١١-١٠] منها أعظم من جزيرة العرب. الشمس[١٢] في كلّ برج[١٣] منها [١٤]منزل تنزله[١٤] حتى إذا وقعت[١٥] في قطبها. قام ملك بالمشرق، فقال: اللّهمّ، [١٦]أعط منفقًا خلفًا[١٦]. وقام ملك بالمغرب، فقال: اللّهمّ، أعط[١٧] ممسكًا تلفًا.

[٢٩] وأخرج ابن المنذر عن عكرمة قال: ما طلعت شمس حتى يناديها سبعون ألف ملك: أطلعي[١]. فتقول: كيف أطلع[٢]، وأنا أعبد من دون الله؟ فيدفعها ملكان[٣] حتى تستقل. ولولا برد ماء[٤] السماء، لاحترق[٥] أهل الأرض من حر الشمس. ولولا أصوات[٦] الروم[٧] أو رومية[٧]. لسمع[٨] الناس. وجرت[٩] الشمس حين تجب[١٠].

[٣٠] وأخرج أبو الشيخ وابن عساكر عن ابن عبّاس قال: للشمس[١] ثلاثمائة وستون كوة، تطلع[٢] كلّ يوم[٣] في كوة[٣]، فلا ترجع إلى تلك الكوة إلى ذلك اليوم[٤] من العام المقبل[٥]. ولا تطلع إلاّ وهي كارهة تقول: يا ربّ، لا تطلعني على عبادك فإنّي[٦] أراهم[٧] يعصونك.

[٣١] وأخرج أبو الشيخ عن سعيد بن عبد الرحمن بن أنبري[١] في قوله تعالى ﴿رَبِّ الْمَشَارِقِ وَالْمَغَارِبِ﴾، قال: للشمس ثلاثمائة وستون برجًا[٢] [٣]في المشرق وثلاثمائة وستون برجًا[٤-٣] في المغرب، لا تطلع[٥] يومين من برج واحد ولا تغيب[٦] يومين في برج واحد.

[٣٢] وأخرج أبو الشيخ عن يحيى بن آدم قال: الشمس تمكث في كلّ برج شهرًا، والبرج ثلاثون مطلعًا بين كلّ مطلعين شعيرة[١]، حتى تستكمل ثلاثين[٢] يومًا. ثم[٣] تتحول[٤] إلى البرج الآخر.

[٣٣] وأخرج ابن عساكر عن ابن عبّاس قال: والذي نفسي بيده، [١]ما طلعت[١] الشمس قط حتى ينخسها سبعون[٢] ألف ملك، فيقولون لها: أطلعي أطلعي[٣]. فتقول: لا أطلع على قوم يعبدوني من دون الله. فيأتيها ملك مستقل[٤] لضياء بني آدم. فيأتيها شيطان يريد أن يصدها عن الطلوع، فتطلع بين قرنيه، فيحرقه الله تعالى تحتها. وذلك قول رسول الله صلّى الله عليه وسلّم، ما طلعت الشمس[٥] إلاّ بين قرني[٦] شيطان. وما غربت الشمس قط إلاّ خرّت لله ساجدة. فيأتيها شيطان يريد أن يصدها عن السجود، فتغرب[٧] بين [٨]قرنيه، فيحرقه[٨] الله تحتها[٩]. وقد قال رسول الله صلّى الله عليه وسلّم، ولا غربت إلاّ بين قرني شيطان.

[٣٤] وأخرج ابن البخاري[١] في تأريخه عن أنس عن النبي صلّى الله عليه وسلّم، قال: إنّ الشمس والقمر إذا رأى أحدهما من عظمة الله تعالى شيئا[٢]. حاد عن مجراه، فانكسف[٣].

[٣٥] وأخرج أبوالشيخ وابن مردويه في التفسير [١]من طريق أبي عصمة[٢] نوح بن أبي مريم عن مقاتل بن حيّان عن عكرمة[١] عن ابن عبّاس رضي الله عنهما، قال[٣]: خلق[٤] الله بحرًا دون السماء بمقدار[٥] ثلاث فراسخ، فهو موج مكفوف قائم في الهواء[٦] بأمر الله، لا يقطر[٧] منه قطرة جار في[٨] سرعة السهم[٩]، تجري فيه الشمس والقمر والنجوم. فذلك قوله تعالى ﴿كُلٌّ فِي فَلَكٍ يَسْبَحُونَ﴾. والفلك دوران [١٠]العجلة في لجة[١٠] غمر ذلك البحر. فإذا أحبّ[١١] الله أن يحدث الكسوف، خرّت الشمس عن العجلة، فتقع في غمر ذلك البحر. فإذا أراد الله أن يعظم الآية، وقعت[١٢] كلّها. فلا يبقى على[١٣] العجلة منها شيء. وإذا أراد الله[١٤] دون ذلك، وقع النصف منها أو الثلث أو الثلثان[١٥] في الماء، ويبقى سائر ذلك على العجلة. وصارت الملائكة الموكلون[١٦] بها فرقتين فرقة يقبلون[١٧] على الشمس فيجرونها [١٨]نحو العجلة، وفرقة يقبلون إلى العجلة فيجرونها[١٨] إلى الشمس. فإذا غربت، رفع بها إلى السماء السابعة في سرعة طيران الملائكة، وتجس[١٩] تحت العرش، فتستأذن[٢٠] من أين [٢١]تؤمر بالطلوع[٢١]. ثم ينطلق بها ما بين السماء السابعة وبين أسفل درجات الجنان في سرعة طيران الملائكة، [٢٢]فتحدر حيال[٢٢] المشرق من سماء إلى سماء. [٢٣]فإذا وصلت[٢٣] إلى هذه السماء، فذلك حين ينفجر[٢٤] الصبح. فإذا أوصلت إلى هذا الوجه من السماء، فذلك حين تطلع الشمس. قال: وخلق الله سبحانه عند المشرق حجابًا

من الظلمة[٢٥] فوضعها على البحر السابع [٢٦]مقداره عدة الليالي في الدنيا[٢٦] منذ[٢٧] خلقها[٢٨] الله إلى يوم القيامة. فإذا كان عند غروب الشمس، أقبل ملك قد وكل بالليل[٢٩] فيقبض[٣٠] قبضة من ظلمة ذلك الحجاب. ثم يستقبل المغرب، فلا يزال[٣١] يرسل تلك الظلمة من خلل أصابعه قليلاً قليلاً، وهو يراعي الشفق. فإذا غاب الشفق، أرسل الظلمة كلّها. ثم[٣٢] ينشر جناحيه[٣٢]، فيبلغان قطري[٣٣] الأرض، وكنفي[٣٤] السماء. فيشرق[٣٥] ظلمة الليل بجناحيه[٣٦]. فإذا حان[٣٧] الصبح، ضمّ جناحيه[٣٨]. ثم يضمّ الظلمة كلّها بعضها إلى بعض بكفّيه[٣٩] من المشرق، ويضعها على البحر السابع بالمغرب.

[٣٦] وأخرج أبوالشيخ عن ميسرة قال: بلغنا إنّ الشمس إذا غربت صلت والقمر والكواكب والليل والنهار والملائكة[١].

[٣٧] وأخرج عن السدي قال: الجبل الذي تطلع الشمس من ورائه طوله ثمانون فرسخًا في السماء.

[٣٨] وأخرج أبوالشيخ عن الحسن قال: قال القمر لربّه: اللّهمّ، إنّك فضلت الشمس عليّ، ونقصتني وأنتني[١]، فلا تطلعها على ما نقصت[٢] منّي. فلا يرى[٣] القمر أبدًا إلاّ والتمام مما يلي الشمس.

[٣٩] وأخرج عبد بن حميد وأبو الشيخ عن قتادة في قوله تعالى ﴿﴿ وَالْقَمَرَ قَدَّرْنَاهُ مَنَازِلَ ﴾، [١]الآية، قال: قدره[١] الله[٢] منازل. فجعل ينقص حتى كان مثل عذق[٣] النخلة.

[٤٠] وأخرج أبو الشيخ عن ابن عبّاس في قوله تعالى ﴿ فَلاَ أُقْسِمُ بِالْخُنَّسِ ﴾[١]، قال: الخنس نجوم[٢] تقطع[٣] المجرة كما يجري[٤] الفرس.

[٤١] وأخرج عن ابن عبّاس رضي الله عنهما، قال[١]: في سهيل أمرت النجوم بأمر، وأمر بأمر فخالف فخولف به.

[٤٢] وأخرج من طريق أبي الطفيل عن علي بن أبي طالب كرّم الله وجهه، قال: إنّ سهيل[١] كان عشّارًا[٢] باليمن [٣]ينجس لبني آدم[٣] بالظلم، فسخه الله شهابًا.

[٤٣] [١]وأخرج مثله من وجه آخر[٢] عن أبي الطفيل رضي الله عنه مرفوعًا مرسلاً[١].

[٤٤] وأخرج[١] ابن عدي بسند ضعيف عن ابن عمرو مرفوعًا : إنّ سهيل[٢] كان[٣] عشّارًا ظلومًا فمسخه الله شهابًا .

[٤٥] وأخرج أبو الشيخ عن الحكم قال : لم يطلع سهيل[١] إلاّ في الاسلام[٢] ، وإنّه المَمْسُوخ .

[٤٦] وأخرج أبو الشيخ عن القرطبي قال : والله ما لأحد من أهل الأرض في السماء من نجم ، ولكن يتبعون الكهنة ويتخذون النجوم علة .

[٤٧] وأخرج ابن جرير وابن أبي حاتم وأبو الشيخ عن عبد الرحمن عن ابن زيد بن أسلم في قوله تعالى ﴿ وَمِن شَرِّ غَاسِقٍ إِذَا وَقَبَ ﴾ ، قال : كانت العرب تقول : [١]الغاسق هو سقوط[١] الثريا . وكانت الأسقام[٢] والطواعين تكثر عند وقوعها [٣]وترتفع عند طلوعها[٣] .

[٤٨] وأخرج أبو الشيخ عن أبي هريرة قال : [١]ما طلع[١] النجم ذات غدوة[٢] إلاّ رفعت[٣] كلّ آفة [٤]وعاهة [٥]أو خفت[٥-٤] .

[٤٩] وأخرج[١] أحمد والطبراني في الصغير وابن السني في الطبّ[٢] النبوي وأبو الشيخ والخطيب في كتاب النجوم عن أبي هريرة قال : قال رسول الله صلّى الله عليه وسلّم ، إذا طلع النجم[٣] ، رفعت العاهة عن كلّ بلد .

[٥٠] وأخرج الحاكم في المستدرك وصححه[١] على شرط الشيخين من طريق ابن جريج[٢] عن ابن أبي مليكة[٣] قال : غدوت على ابن عبّاس [٤]فقال : ما نمت[٤] البارحة . قلت : لم ؟ قال : قالوا : طلع الكوكب[٥] ذو الذنب ، فخشيت[٦] أن يكون الدخان [٧]قد طرق[٧] .

الباب الخامس

ما ورد في الليل والنهار والساعات[١]

[١] أخرج أبو الشيخ من طريق عبد المنعم[١] [٢]بن إدريس[٢] عن أبيه عن وهب عن سلمان قال : الليل موكل به ملك يقال له شراهيل[٣] . فإذا حان وقت الليل ، أخذ خرزة سوداء ، فدلاّها من قبل المغرب . فإذا نظرت إليها الشمس ، وجست[٤] في

أسرع من طرفة عين[٥]. وقد [٦]أمرت الشمس أن لا تغرب حتى ترى الخرزة. فإذا غربت[٦] جاء الليل، فلا تزال الخرزة معلقة حتى يجيء ملك آخر، يقال له هراهيل[٧]، بخرزة بيضاء، فيعلقها من قبل المطلع. فإذا رأها شراهيل[٨]، مدّ إليه[٩] خرزته. وترى الشمس الخرزة البيضاء، فتطلع[١٠]. وقد أمرت أن لا تطلع حتى تراها. فإذا طلعت، جاء النهار.

[٢] وأخرج الحاكم وصححه عن أبي هريرة قال: جاء رجل [١]إلى النبي[١] صلّى الله عليه وسلّم، فقال: يا محمد، أرأيت جنة عرضها السماوات والأرض؟ فأين النار؟ قال: أرأيت الليل الذي قد ألبس كلّ شيء؟ فأين جعل النهار؟ قال: الله أعلم. قال: كذلك يفعل الله[٢] ما يشاء.

[٣] وأخرج أبو الشيخ عن ابن عبّاس: إنّه سئل أيّهما كان قبل، الليل أو[١] النهار؟ قال[٢] فقرأ[٣]: ﴿ أَوَ لَمْ [٤]يَرَ الَّذِينَ[٤] كَفَرُوا أَنَّ السَّمَاوَاتِ وَالأَرْضَ كَانَتَا رَتْقًا فَفَتَقْنَاهُمَا ﴾. ثم قال: هل كان بينهما إلاّ ظلمة؟ وذلك لتعلموا[٥] أن الليل كان قبل النهار.

[٤] وأخرج ابن عبّاس رضي الله عنهما، قال: إنّ الله خلق يومًا، فسمّاه الأحد. ثم خلق ثانيًا، فسمّاه الاثنين. ثم خلق ثالثًا، فسمّاه الثلاثاء[١]. ثم خلق رابعًا، فسمّاه الأربعاء[٢]. ثم خلق خامسًا، فسمّاه الخميس. فخلق الأرض يوم الأحد والاثنين. وخلق الجبال يوم الثلاثاء، ولذلك[٣] تقول[٤] الناس: إنّه يوم ثقيل. وخلق الأنهار والأشجار يوم الأربعاء. وخلق الطير والوحش والسباع والهوام والآفة[٥] يوم الخميس. وخلق الانسان يوم الجمعة. وفرغ من الخلق يوم السبت.

[٥] وأخرج البخاري رحمه الله في الأدب المفرد عن أبي هريرة رضي الله عنه، عن النبي صلّى الله عليه وسلّم، قال: لا يقل[١] أحدكم: يا خيبة الدهر. قال الله[٢]: أنا الدهر، أرسل الليل والنهار، فإذا شئت قبضتهما[٣].

الباب السادس

ما ورد في الماء والرياح[١]

[١] وأخرج أبوالشيخ من طريق أبي عصمة[١] [٢] نوح بن أبي مريم، وهو كذّاب وضّاع، عن مقاتل بن حيّان عن الضحّاك[٣] عن ابن عبّاس مرفوعًا: لما أراد الله سبحانه أن يخلق الماء، خلق من النور ياقوتة خضراء غلظها[٤] كغلظ سبع سماوات وسبع أرضين وما بينهن. ثم دعاها، فلما سمعت كلام الله، ذابت فرقًا حتى صارت ماء فهو مرتعد[٥] من مخافة الله تعالى إلى يوم القيامة. ثم خلق الريح، فوضع الماء على متن الريح. ثم خلق العرش، فوضعه على الماء.

[٢] وأخرج الفريابي[١] وابن جرير وابن أبي حاتم وأبوالشيخ والحاكم في المستدرك وصححه[٢] عن ابن عبّاس رضي الله عنهما، إنّه سئل: حين كان[٣] العرش على الماء، على أيّ شيء كان الماء؟ قال: على متن الريح.

[٣] وأخرج أبوالشيخ عن وهب قال: ثم خلق الله الريح، فبسطها[١] على الماء. فضربت[٢] الماء حتى صار[٣] أمواجًا[٤] وزبدًا.

[٤] وأخرج عن ابن عبّاس قال: الماء والريح جندان من جنود الله، [١]والريح جند الله[١] الأعظم.

[٥] [١]وأخرج عن مجاهد قال: الريح لها جناحان وذنب[١].

[٦] وأخرج أبوالشيخ عن ابن عمرو قال: قال رسول الله صلّى الله عليه وسلّم، ما فتح الله على عاد من الريح إلاّ مثل[١] موضع الخاتم.

[٧] وأخرج مثله من حديث ابن عبّاس مرفوعًا.

[٨] وأخرج عن كعب قال: ساكن[١] الأرض الثانية الريح العقيم[٢]. لما أراد الله أن يهلك قوم عاد، أوحى إلى خزنتها أن افتحوا منها بابًا. قالوا: يا ربّنا، مثل منخر الثور؟ قال: إذا[٣] تكفي الأرض بمن[٤] عليها، افتحوا منها مثل حلقة الخاتم[٥].

[٩] وأخرج ابن أبي حاتم عن عبدالله بن عمرو رضي الله عنهما، قال: قال رسول الله صلّى الله عليه وسلّم، الريح مسجونة في الأرض الثانية. فلما أراد الله أن يهلك

عادًا، أمر خازن الريح أن يرسل عليها[١] ريحًا يهلك[٢] عادًا. قال: يا ربّ، أرسل من[٣] الريح قدر منخر الثور؟ قال له الجبار[٤]: لا إذن[٥] تكفي[٦] الأرض ومن عليها، ولكن أرسل عليها[٧] بقدر خاتم[٨].

[١٠] وأخرج أبوعبيد وابن أبي حاتم وابن المنذر وابن أبي الدنيا وأبوالشيخ عن ابن عمرو قال: الرياح[١] [٢]ثمان أربع[٢] منها رحمة وأربع منها[٣] عذاب. فأمّا الرحمة: فالناشرات والمبشّرات والمرسلات والذاريات[٤]. وأمّا العذاب: فالعقيم والصرصر، وهما في البر، والعاصف والقاصف، وهما في البحر.

[١١] وأخرج أبوالشيخ مثله عن ابن عبّاس إلاّ أنّه قال والرخاء بدل الذاريات[١].

[١٢] وأخرج أبوالشيخ عن عيسى بن يحيى[١] الخياط قال: بلغنا أنّ الرياح[٢] سبع: الصبا والدبور والجنوب والشمال والنكباء والخروق وريح القائم. فأمّا الصبا فتجي[٣] من المشرق. وأمّا الدبور فتجي[٤] من المغرب. وأمّا الجنوب فتجي[٥] عن[٦] يسار القبلة. وأمّا الشمال فتجي[٧] عن يمين القبلة. وأمّا النكباء[٨] فبين الصبا والجنوب[٩]. وأمّا الخروق فبين الشمال والدبور. وأمّا ريح[١٠] القائم فأنفاس الخلق.

[١٣] وأخرج عن الحسن[١] قال: جعلت الرياح[٢] على الكعبة. [٣]فإذا أردت أن تعلم ذلك، فأسند ظهرك إلى باب الكعبة[٣]، فإنّ[٤] الشمال عن[٥] شمالك، وهي[٦] مما يلي الحجر[٧]. [٨]والجنوب عن يمينك، وهي[٩] مما يلي الحجر[٨] الأسود. والصبا [١٠]مقابلك، وهي[١٠] مستقبل[١١] باب الكعبة. والدبور من دبر الكعبة.

[١٤] وأخرج ابن أبي حاتم عن حسين[١] بن علي الجعفي[٢] قال: سألت إسرائيل بن يونس عن أيّ شيء سمّيت الريح؟ قال: على القبلة: شماله الشمال، وجنوبه الجنوب. والصبا ما جاء من قبل وجهها، والدبور ما جاء من خلفها.

[١٥] وأخرج ابن أبي حاتم وأبوالشيخ عن [١]حمزة بن حبيب[١] قال: الدبور الريح الغربية، والقبول الشرقية، [٢]والشمال الجنوبية[٢]، واليمان القبلية، والنكباء تأتي من الجوانب الأربع[٣].

[١٦] وأخرج أبوالشيخ عن ابن عبّاس قال: الشمال ما بين الجدي ومطلع[١] الشمس. والجنوب ما بين مطلع الشمس وسهيل. والصبا ما بين مطلع[٢] الشمس إلى[٣] الجدي. والدبور ما بين مغرب الشمس إلى سهيل.

[١٧] وأخرج أبوالشيخ عن أنس قال: قال رسول الله صلّى الله عليه وسلّم، الجنوب من ريح الجنة.

[١٨] وأخرج ابن جرير[١] وابن مردويه في تفسيرهما[٢] وابن أبي الدنيا في كتاب السحاب وأبوالشيخ في كتاب العظمة عن أبي هريرة قال: سمعت رسول الله صلّى الله عليه وسلّم، يقول: ريح[٣]الجنوب من الجنّة. [٤]وهي من اللواقح[٤] وفيها منافع للناس. والشمال من النار تخرج فتمرّ بالجنة[٥]، فتصيبها نفحة[٦] من الجنة، فبردها[٧] من ذلك.

[١٩] وأخرج ابن راهويه[١] وابن أبي شيبة في مسنديهما والبخاري في تأريخه والبزار[٢] وأبوالشيخ عن أبي ذر رضي الله عنه، عن النبي صلّى الله عليه وسلّم، قال: إنّ الله خلق في الجنة ريحًا بعد الريح بسبع[٣] سنين، من دونها باب مغلق. وإنّما يأتيكم الروح[٤] من خلل ذلك الباب. [٥]ولو فتح ذلك الباب[٥-٦]، لأذرت ما بين السماء والأرض. وهي عند الله الأزيب، وعندكم الجنوب.

[٢٠] وأخرج أبوالشيخ عن ابن عبّاس قال: الجنوب سيّد[١] الأرواح[٢]، واسمها عند الله الأزيب[٣]. من دونها سبعة أبواب. وإنّما[٤] يأتيكم [٥]فها ما يأتيكم[٥] من خللها. ولو فتح منها[٦] باب واحد، لأذرت[٧] ما بين السماء والأرض.

[٢١] وأخرج عن ابن عبّاس قال: ما راحت جنوب قط إلاّ سال [١]واد من ماء[١]. رأيتموه أو لم تروه؟

[٢٢] وأخرج عن قيس بن عبّاد[١] قال: الشمال ملح الأرض، ولولا الشمال، لأنتنت[٢] الأرض.

[٢٣] وأخرج عبدالله بن أحمد في زوائد الزهد وأبوالشيخ عن كعب قال: لو احتسبت الريح عن الناس ثلاثة أيام، لأنتن ما بين السماء[١] والأرض.

[٢٤] وأخرج أبوالشيخ عن عثمان الأعرج قال: إنّ مساكن[١] الرياح[٢] تحت أجنحة الكروبيين[٣] حملة العرش. فتهيج[٤] فتقع بعجلة الشمس[٥]، فتعين الملائكة على جريها[٦]. ثم تهيج من عجلة الشمس فتقع في البحر. ثم تهيج من[٧] البحر فتقع برؤوس[٨] الجبال. ثم تهيج[٩]من رؤوس[٩] الجبال فتقع في البر. فأمّا الشمال فأنّها[١٠] تمرّ بجنّة عدن فتأخذ[١١] من عرف[١٢] طيبها. ثم تأتي[١٣] الشمال حدها من كرسي بنات

نعش إلى مغرب الشمس. وتأتي[١٤] الدبور حدها من مغرب الشمس إلى مطلع سهيل. وتأتي الجنوب حدها من مطلع سهيل إلى مطلع الشمس. وتأتي الصبا حدها من مطلع الشمس إلى كرسي بنات نعش. فلا تدخل هذه في حد هذه، ولا هذه في حد هذه.

[٢٥] وأخرج ابن جرير وابن أبي حاتم وابن المنذر وأبو الشيخ عن عبيد[١] بن عمير قال: يبعث[٢] الله المبشرة، فتقم الأرض قمًّا. ثم يبعث المثيرة. فتثير السحاب. ثم يبعث المؤلفة، فتؤلفه. ثم يبعث اللواقح، [٣]فتلقح الثمر[٣]. ثم قرأ: ﴿وَأَرْسَلْنَا الرِّيَاحَ لَوَاقِحَ﴾.

[٢٦] وأخرج ابن أبي حاتم عن عبدالله بن المبارك قال: إنّ للريح جناحًا[١]، وإنّ القمر يأوي إلى غلاف[٢] من الماء[٣-٤].

الباب السابع

ما ورد في السحاب والمطر[١]

[١] أخرج ابن أبي حاتم وأبو الشيخ عن عطاء قال: السحاب يخرج من الأرض. ثم [١]قرأ: ﴿يُرْسِلُ[١] الرِّيَاحَ[٢] فَتُثِيرُ سَحَابًا﴾.

[٢] وأخرج ابن أبي حاتم وأبو الشيخ عن ابن عبّاس رضي الله عنهما، قال: إنّ الله يبعث الريح تحمل[١] الماء من السماء. [٢]ثم يرمي[٢] به السحاب[٣]تدر كما تدر اللقحة[٣].

[٣] وأخرج الطبراني في الأوسط بسند جيد عن علي كرّم الله وجهه، قال: أشدّ خلق ربّك عشرة الجبال، والحديد ينحت[١] الجبال، والنار تأكل الحديد، والماء يُطفئ النار، والسحاب المسخّر بين السماء والأرض يحمل[٢] الماء والريح ينقل[٣] السحاب. والإنسان[٤] يتقي الريح بيده ويذهب فيها[٥] لحاجته. والسكر[٦] يغلب الإنسان، والنوم يغلب السكر[٧]. والهمّ يمنع النوم. فأشدّ خلق ربّك الهمّ.

[٤] وأخرج أبو الشيخ عن مجاهد في قوله تعالى ﴿فَالْحَامِلَاتِ وِقْرًا﴾ قال: السحاب يحمل[١] المطر.

[٥] وأخرج ابن أبي حاتم وأبوالشيخ عن كعب قال: السحاب غربال المطر. ولولا السحاب حين ينزل الماء[١] من السماء، لأفسد ما يقع عليه من الأرض. والبذر[٢] ينزل[٣] من السماء معه[٤].

[٦] [١]وأخرج ابن أبي حاتم وأبوالشيخ[١] عن خالد ابن معدان قال: إنّ في الجنة شجرة تثمر السحاب، فالسوداء منها[٢] الثمرة التي قد نضجت التي تحمل المطر[٣]. والبيضاء[٤] الثمرة التي [٥]لم تنضج[٥] لا تحمل المطر.

[٧] وأخرج الإمام أحمد وابن أبي الدنيا [١]في كتاب المطر[١] وأبوالشيخ عن الغفاري قال[٢]: سمعت رسول الله صلّى الله عليه وسلّم، يقول: ينشئ الله السحاب، فينطق أحسن المنطق، ويضحك أحسن الضحك. [٣]قال إبراهيم [٤]بن سعد[٤]: المنطق[٥] الرعد والضحك البرق[٣].

[٨] وأخرج أبوالشيخ عن أبي المثنى: إنّ الأرض قالت: يا رب، أروني من الماء، ولا تنزله عليّ[١] منهمرًا كما أنزلته على قوم الطوفان. قال: [٢]سأجعل لك السحاب[٢] غربالاً.

[٩] وأخرج أبوالشيخ عن ابن عبّاس قال: السحاب الأسود فيه المطر، والأبيض فيه الندى، وهو الذي ينضج الثمار.

[١٠] وأخرج ابو الشيخ عن عائشة رضي الله عنها، قالت: سمعت رسول الله صلّى الله عليه وسلّم، يقول: إذا نشأت[١] بحرية ثم تشاءمت[٢]، فتلك عين[٣] أو عام غديقة، يعني مطرًا كثيرًا[٤].

[١١] وأخرج أبوالشيخ عن الحسن: إنّه سئل[١]: المطر من السماء أم من السحاب؟ قال: من السماء. إنّما السحاب علم ينزل عليه الماء من السماء.

[١٢] وأخرج عن وهب قال: لا أدري المطر أنزل[١] قطرة من السماء في السحاب [٢]أم خلق في السحاب فأمطر[٢].

[١٣] وأخرج ابن أبي حاتم [١]وأبو الشيخ[١] والخرائطي في مكارم الأخلاق عن خالد ابن معدان قال: المطر ماء يخرج[٢] من تحت العرش، فينزل من سماء[٣] إلى سماء حتى [٤]يجتمع في[٤] [٥]السماء الدنيا[٥]. فيجتمع في موضع يقال له الأبزم. فيجيء السحاب الأسود وتدخله فتشربه[٦] مثل شرب الإسفنجة[٧]. فيسوقها الله حيث يشاء[٨].

[١٤] وأخرج ابن أبي حاتم وأبوالشيخ عن عكرمة قال: ينزل الماء من السماء السابعة [١]فيقع القطر[١] منه على السحابة[٢] مثل البعر[٣].

[١٥] وأخرج أبو الشيخ عن الشعبي في قوله تعالى[١] ﴿فَسَلَكَهُ[٢] يَنَابِيعَ فِي الْأَرْضِ﴾ قال: كلّ ماء في الأرض من السماء نزل.

[١٦] وأخرج أبوالشيخ عن[١] ابن عبّاس قال: قال رسول الله صلّى الله عليه وسلّم، ما أنزل[٢] من السماء كفاء من ماء إلاّ بمكيال، ولا كفاء من ريح إلاّ بمكيال، إلاّ يوم نوح. فإنّ الماء طَغَا على الخزان[٣]. قال الله تعالى: ﴿[٤]إِنَّا لَمَّا طَغَا الْمَاءُ حَمَلْنَاكُم فِي الْجَارِيَةِ﴾. ويوم عاد، فأنّ[٥] الريح عتت على الخزان. قال الله تعالى[٤]: ﴿بِرِيحٍ[٦] صَرْصَرٍ عَاتِيَةٍ﴾.

[١٧] وأخرج أبوالشيخ عن سعيد بن جبير قال: لم ينزل الله من السماء قطرة إلاّ بعلم[١] الخزان، إلاّ حيث طغى الماء. فإنه غضب لغضب الله، فطغى على الخزان، فخرج[٢] ما لا يعلمون ما هو.

[١٨] [١]وأخرج أبوالشيخ عن كعب قال: المطر زوج الأرض[١].

[١٩] وأخرج أبوالشيخ من طريق سعيد بن جبير عن ابن عبّاس قال: يخلق الله اللؤلؤ في الأصداف من المطر. تفتح[١] الأصداف أفواهها عند المطر. فاللؤلؤة العظيمة من القطرة العظيمة، واللؤلؤة الصغيرة من القطرة[٢] الصغيرة[٣].

[٢٠] وأخرج ابن أبي حاتم وأبوالشيخ عن عكرمة قال: ما أنزل الله من السماء قطرة إلاّ أنبتت بها[١] [٢]في الأرض[٢] عشبة[٣] أم[٤] في البحر لؤلؤة.

[٢١] وأخرج أبوالشيخ عن عبيد[١] بن عمير قال: يبعث الله ريحًا[٢] فتقم الأرض. ثم يبعث الثانية فتثير[٣] سحابًا، فيجعله كسفًا. ثم يبعث الثالثة، فتولف بينه فيجعله ركامًا. ثم[٤] الرابعة فتمطر.

[٢٢] وأخرج ابن أبي حاتم وأبو الشيخ عن السدي[١] قال: يرسل الله الريح فتأتي بالسحاب[٢] من بين الخافقين طرف السماء والأرض حيث[٣] يلتقيان، فيخرجه[٤]. ثم ينشره فيبسطه في السماء كيف يشاء. ثم يفتح أبواب السماء، فيسيل الماء على السحاب. ثم يمطر[٥] السحاب بعد ذلك.

[٢٣] وأخرج أبوالشيخ عن أبي أمامة[١] قال: قال رسول الله صلّى الله عليه وسلّم، ما مطر قوم إلاّ برحمة، ولا قحطوا إلاّ بخطيئة[٢].

[٢٤] وأخرج أبوالشيخ عن الحسن: إنّه كان إذا نظر إلى السحاب قال: فيه والله رزقكم[١] ولكنكم[٢] تحرمونه بذنوبكم.

[٢٥] وأخرج الشافعي في الأم وابن أبي الدنيا في المطر وأبوالشيخ عن المطلب بن خنطب[١]: إنّ النبي صلّى الله عليه وسلّم، قال: ما من ساعة من ليل ولا نهار إلاّ والسماء تمطر فيها يصرفه[٢] الله حيث يشاء.

[٢٦] وأخرج ابن أبي حاتم عن ابن مسعود رضي الله عنه، قال: ما من عام بأمطر من عام، ولكن الله يسوقه أو يصرفه[١] حيث يشاء.

[٢٧] وأخرج أبو الشيخ عن الحسن قال: ما من عام بأمطر من عام، ولكن الله يصرفه[١] حيث يشاء. وينزل مع المطر كذا وكذا من الملائكة يكتبون حيث يقع ذلك المطر ومن يرزقه وما يخرج منه مع[٢] كلّ قطرة.

[٢٨] وأخرج ابن أبي الدنيا في المطر وأبو الشيخ عن ابن عبّاس قال: ما نزل مطر من السماء[١] إلاّ معه البزر. أمّا أنّكم لو بسطتم[٢] نطعا[٣] لرأيتموه.

[٢٩] وأخرج ابن أبي الدنيا وأبوالشيخ عن ابن عبّاس قال: المطر مزاجه من الجنّة. فإذا كثر المزاج عظمت البركة وإن [١]قلّ المطر، وإذا[١] قلّ المزاج قلّت البركة[٢] وإن عظم المطر.

[٣٠] وأخرج ابن أبي حاتم عن خالد بن يزيد قال: المطر منه من[١] السماء، ومنه ما[٢] يسقيه[٣] الغيم من البحر، فيعذبه[٤] الرعد والبرق. فأمّا ما كان من البحر، فلا يكون له نبات، وأمّا النبات فمما[٥] كان من السماء.

[٣١] وأخرج أبوالشيخ [١]عن كعب[١] عن ابن عبّاس قال: ما من عين جارية إلاّ وأصلها من الثلج.

[٣٢] وأخرج أبوالشيخ عن كعب قال: لولا أنّ الجليد ينزل من السماء الرابعة، لم يمر بشيء إلاّ أهلكه[١].

[٣٣] وأخرج أبوالشيخ عن أبي مالك الغفاري قال: سألت[١] ابن عبّاس، فقلت:

[٢]ينزل الأرض[٢] القفر[٣]، فتمطر[٤] من الليل، فيصبح من الغد في الأرض ضفادع خضر. فقال ابن عبّاس: إنّ هذه السماء الدنيا إلى التي تليها وما[٥] بينهما ماء مطبق تجري[٦] فيه[٧] الدواب مثل ما في بحركم[٨] هذا.

[٣٤] وأخرج ابن أبي زميل[١] في أصول السنة بسند عن سلمان الفارسي قال: تحت هذه السماء بحر ماء، يطفح فيه الدواب مثل ما في بحركم هذا. ومن ذلك[٢] البحر أغرق[٣] الله قوم نوح، وهو ما أسكنه الله للعذاب. وسينزله[٤] قبل يوم القيامة، فيغرق الله به من يشاء[٥].

[٣٥] فائدة[١]: أخرج أبو الشيخ عن قتادة قال: كان[٢] آدم عليه السلام، يشرب من السحاب.

الباب الثامن

ما ورد في الرعد والبرق والصواعق

[١] قال الله تعالى: ﴿ فِيهِ ظُلُمَاتٌ وَرَعْدٌ وَبَرْقٌ يَجْعَلُونَ أَصَابِعَهُم فِي آذَانِهِم مِنَ الصَّوَاعِقِ[١] ﴾.

[٢] وقال[١]: ﴿ هُوَ الَّذِي يُرِيكُمُ الْبَرْقَ ﴾.

[٣] وأخرج أحمد والترمذي وصححه النسائي وأبو الشيخ عن ابن عبّاس رضي الله عنهما، إنّ اليهود قالوا[١]: يا رسول الله، أخبرنا عن الرعد، ما هو[٢]؟ قال: ملك من الملائكة موكل بالسحاب، معه مخارق[٣] من نار يسوق بها[٤] السحاب حيث شاء الله. قالوا: فما[٥] الصوت[٦] الذي يسمع[٧] فيه؟ قال: زجرة[٨] السحاب إذا [٩]زجره حتى[٩] ينتهي إلى حيث أمر[١٠]. قالوا: صدقت.

[٤] وأخرج ابن المنذر وأبو الشيخ من طريق شهر بن حوشب عن ابن عبّاس رضي الله عنهما، قال: الرعد ملك يسوق السحاب بالتسبيح كما يسوق الحادي الإبل بحدائه.

[٥] [١]وأخرج أبو الشيخ من طريق أبي مالك عن ابن عبّاس قال: الرعد ملك يزجر السحاب بالتسبيح والتكبير[١].

[٦] وأخرج أبوالشيخ عن شهر بن حوشب قال: الرعد ملك موكل بالسحاب يسوقه كما يسوق الحادي الإبل. فإذا خالفت سحابة صاح بها. فإذا اشتد غضبه تناثرت[١] من فيه النيران، وهي الصواعق التي رأيتم.

[٧] وأخرج عن السدي قال: الرعد ملك يسير[١] السحاب [٢]ويأمره بما يريد أن يمطر[٢].

[٨] وأخرج ابن المنذر وأبوالشيخ عن الضحّاك قال: الرعد ملك [١]يسمّى الرعد[١]، وصوته الذي يسمع وهو[٢] تسبيحه[٣].

[٩] وأخرج ابن جرير وابن أبي حاتم [١]وأبوالشيخ[١] والبيهقي في مسنده[٢] عن علي [٣]بن أبي طالب[٣] رضي الله عنه، قال[٤]: البرق مخارق[٥] من نار[٦] بأيدي ملائكة السحاب[٧] يزجرون به[٨] السحاب.

[١٠] وأخرج ابن أبي الدنيا وأبوالشيخ من طريق جويبر عن الضحّاك عن ابن عبّاس رضي الله عنهما، قال: البرق[١] ملك يتراءى[٢] بهذه الصفة[٣].

[١١] وأخرج ابن مردويه عن عمرو بن بجاد[١] الأشعري[٢] قال: قال رسول الله صلّى الله عليه وسلّم، إسم السحاب عند الله العنان. والرعد ملك يزجر السحاب. والبرق طرف[٣] ملك يقال له روفائيل[٤].

[١٢] وأخرج ابن مردويه عن جابر بن عبدالله[١]: إنّ رسول الله صلّى الله عليه وسلّم، سئل عن منشأ السحاب. فقال: [٢]إنّ ملكًا[٢] موكلا بالسحاب يلمّ القاصية[٣] ويلحم الرابية، في يده مخراق[٤]، فإذا رفع برقت، وإذا زجر رعدت، وإذا ضرب صعقت[٥].

[١٣] وأخرج البخاري في الأدب وابن أبي الدنيا في المطر وابن جرير من طريق عكرمة عن ابن عبّاس قال: إنّ[١] الرعد ملك [٢]ينعق بالغيث[٣] كما ينعق الراعي بغنمه[٢].

[١٤] [١]وأخرج ابن جرير وابن مردويه من طريق الضحّاك عن ابن عبّاس قال: الرعد ملك[١] من الملائكة اسمه الرعد، وهو الذي تسمعون صوته. والبرق سوط[٢] من نور[٣] يزجر به الملك[٤] السحاب[٥].

[١٥] وأخرج ابن المنذر وابن مردويه من طريق مجاهد عن ابن عبّاس قال: الرعد ملك اسمه الرعد، [١]وصوته هذا[١] تسبيحه. فإذا اشتد زجره احتك[٢] السحاب، واضطرب[٣] من خوفه فتخرج[٤] الصواعق من بينه[٥].

[١٦] وأخرج ابن جرير عن مجاهد قال: البرق مصع ملك.

[١٧] وأخرج ابن أبي حاتم عن محمد بن سلمة[١] قال: بلغنا أن البرق ملك له أربعة[٢] وجوه: وجه الانسان، ووجه ثور، ووجه نسر، ووجه أسد[٣]. فإذا [٤]مصع بذنبه[٤]، فذلك[٥] البرق.

[١٨] وأخرج ابن أبي حاتم عن أبي هريرة قال: [١]إنّ البرق[١] أصطفاق[٢] البرد[٣].

[١٩] وأخرج أبو الشيخ عن أبي الجلد قال: السماء من ماء مكفوف. والبرق تلألؤ[١] الماء. والصواعق مخاريق يزجر بها السحاب.

[٢٠] وأخرج الإمام أحمد في الزهد وابن أبي حاتم وأبو الشيخ عن أبي[١] عمران الحبوني[٢] قال: بلغنا أن دون العرش بحور[٣] من نار تقع[٤] منها الصواعق.

[٢١] وأخرج أبو الشيخ عن السدي قال: الصواعق[١] نار.

[٢٢] وأخرج ابن عساكر عن كعب الأحبار قال: يوشك بالرعد والبرق أن [١]يهاجرا إلى[١] الشام حتى لا [٢]تكون رعدة[٢] ولا برقة إلاّ ما[٣] بين العريش والفرات.

الباب التاسع

ما ورد في المجرة والقوس

[١] أخرج الطبراني وأبو الشيخ من طريق عن معاذ بن جبل[١] عن النبي صلّى الله عليه وسلّم، قال: المجرة التي في السماء من عرق الأفعى[٢] التي تحت[٣] العرش.

[٢] وأخرج الطبراني عن جابر[١] بن عبدالله قال: قال رسول الله صلّى الله عليه وسلّم، يا معاذ، إنّي مرسلك إلى قوم أهل كتاب[٢]. فإذا سئلت عن المجرة التي[٣] في السماء فقل: هي لعاب حية تحت العرش.

[٣] وأخرج أبوالشيخ عن خالد بن معدان قال: المجرة التي في السماء من عرق[١] الهوام الذين يحملون العرش.

[٤] وأخرج البخاري رحمه الله في الأدب المفرد وأبو الشيخ [١]من طريق[١] عن علي [٢]ابن أبي طالب[٢] كرّم الله وجهه قال: المجرة [٣]التي في السماء[٣-٤] أبواب السما[٥] التي صبّ[٦] الله منها الماء المنهمر[٧] على قوم نوح عليه السلام.

[٥] وأخرج أبوالشيخ بسند صحيح عن ابن عبّاس رضي الله عنهما، قال: المجرة باب السماء الذي[١] تنشق[٢] منه[٣].

[٦] وأخرج من وجه آخر عن ابن عبّاس قال: المجرة باب السماء وطرفها[١] من هاهنا مهب[٢] الدبور [٣]وتتيامن تتياسر[٣].

[٧] وأخرج البخاري رحمه الله في الأدب المفرد عن ابن عبّاس رضي الله عنهما، قال: المجرة باب من أبواب السماء وأمّا قوس قزح فأمان من الغرق بعد قوم نوح عليه السلام.

[٨] وأخرج سعيد[١] بن منصور [٢]في سننه والبخاري في الأدب المفرد[٢] بسند صحيح عن سعيد بن جبير: إنّ هرقل كتب إلى معاوية [٣]بن سفيان بن حرب[٣] يسأله عن المجرة وعن القوس وعن مكان طلعت فيه الشمس ثم لم تطلع [٤]فيه قبل ذلك ولا بعده[٤]. فقال معاوية: من [٥]لي بذلك[٥]؟ فقيل[٦]. ابن عبّاس. فكتب معاوية[٧] إليه [٨]يسأله. فكتب إليه[٩-٨] ابن عبّاس رضي الله عنهما، أمّا المجرة فباب السماء الذي[١٠] تنشق منه، وأمّا القوس فإنّه أمان لأهل الأرض من الغرق، وأمّا المكان الذي طلعت فيه الشمس فالمكان[١١] من البحر حين انفلق لبني إسرائيل[١٢].

[٩] وأخرج أبونعيم في الحلية عن ابن عبّاس: إنّ النبي صلّى الله عليه وسلّم، قال: لا تقولوا: قوس قزح، فإنّ[١] قزح شيطان. ولكن قولوا: قوس الله، فهو أمان[٢] لأهل[٣] الأرض.

[١٠] وأخرج الحاكم في المستدرك عن ابن عبّاس مرفوعًا: أمان[١] لأهل[٢] الأرض من الغرق القوس[٣].

[١١] وأخرج إسحاق عن بشر وابن عساكر من طريق[١] جويبر ومقاتل عن الضحّاك

عن ابن عبّاس رضي الله عنهما جمعين، في قوله تعالى: ﴿ وَقِيلَ يَا أَرْضُ ابْلَعِي مَاءَكِ[٢]. وَيَا سَمَاءُ، أَقْلِعِي ﴾[٣]. فابتلعت الأرض ماءها، وارتفع[٤] ماء السماء حتى بلغ عنان[٥] السماء رجاء أن يعود إلى مكانه. فأوحى الله إليه أن أرجع، فإنّك رجس وغضب. فرجع الماء[٦] فملح وخم[٧] وتردد. فأصاب الناس منه الأذى. فأرسل الله الريح، فجمعه في مواضع البحار، فصار [٨]زعاقًا مالحًا[٨] ينتفع[٩] به وتطلع نوح عليه السلام. فإذا الشمس قد طلعت وبدا له[١٠] اليد من السماء. وكان ذلك آية[١١] [١٢]ما بينه وبين[١٢] ربّه أمان[١٣] من[١٤] الغرق. واليد القوس الذي يسمّونه قوس قزح. ونهى أن يقال قوس قزح لأنّ قزح شيطان، وهو[١٥] قوس الله. وزعموا أنّه كان عليه[١٦] وتر وسهم قبل ذلك في السماء. فلمّا جعله[١٧] الله أمانًا[١٨] لأهل الأرض من الغرق نزع الله الوتر والسهم، [١٩] والله أعلم[١٩].

الباب العاشر

ما ورد في الزلزلة[١]

[١] أخرج أبوالشيخ وابن أبي الدنيا في كتاب العقوبات عن ابن عبّاس رضي الله عنهما، قال: خلق الله جبلاً يقال له قاف محيط بالأرض، وعروقه إلى الصخرة التي عليها الأرض. فإذا أراد الله سبحانه وتعالى أن يزلزل قرية، أمر ذلك الجبل، فيحرك[١] الذي[٢] يلي[٣] تلك القرية. فيزلزلها[٤] ويحركها، فمن [٥]ثم تحرك[٥] القرية [٦]دون القرية[٦].

[٢] وأخرج أبوالشيخ نحوه عن وهب [١]رضي الله عنه[١].

الباب الحادي عشر

ما ورد في الجبال[١]

[١] أخرج أبوالشيخ عن عبدالله بن يزيد قال: [١]قاف جبل[١] محيط بالأرض من زمردة[٢] عليها كنف السماء.

[٢] وأخرج ابن أبي حاتم وأبو الشيخ عن كعب في قوله تعالى ﴿ حَتَّى[١] تَوَارَتْ بِالْحِجَابِ ﴾ ، قال : الحجاب جبل[٢] أخضر من ياقوتة محيط بالخلائق ، فمنه خضرة السماء [٣]التي يقال لها الخضراء. وخضرة البحر من السماء[٣] ، فمن ثم يقال البحر[٤] الأخضر.

[٣] وأخرج أبوالشيخ عن ابن عبّاس قال : البحر على صخرة خضراء ، فما ترون من خضرة السماء ، فهو[١] من خضرة تلك الصخرة.

[٤] وأخرج ابن أبي حاتم وأبوالشيخ عن أنس قال : قال رسول الله صلّى الله عليه وسلّم ، لما خلق الله الأرض ، جعلت تمد[١] فخلق الجبال. فألقاها عليها ، فاستقرت[٢]. فعجبت[٣] الملائكة من خلق الجبال. فقالت : يا ربّ ، هل من خلقك أشد من الجبال؟ فقال[٤] : الحديد. فقالت[٥-٦] : يا ربّ ، فهل[٧] من[٨] خلقك أشد من الحديد[٩]؟ قال : نعم ، النار. [١٠]فقالت : فهل من[١٠] خلقك أشد من النار؟ قال : نعم ، الماء. قالت[١١] : يا ربّ ، [١٢]فهل من[١٢] خلقك[١٣] أشد من الماء؟ قال : نعم ، الريح. قالت[١٤] : يا ربّ ، [١٥]فهل من[١٥] خلقك[١٦] أشد من الريح؟ قال : نعم ، ابن آدم يتصدق بيمينه[١٧] يخفيها[١٨] من[١٩] شماله.

[٥] وأخرج ابن أبي حاتم [١]عن عطاء[١] قال : أوّل جبل وضع على الأرض أبو قبيس.

[٦] وأخرج أبوالشيخ عن ابن عبّاس قال : إنّ الجبال لتفخر[١] على الأرض بأنّها [٢]أثبتت بها[٢].

الباب الثاني عشر

ما ورد في البحار

[١] أخرج أبوالشيخ عن ابن عبّاس رضي الله عنهما ، قال : إنّ هذا الخلق أحاط بهم بحر. قيل : وما بعد البحر؟ قال : هواء[١]. قيل : وما بعد الهواء[٢]؟ قال : بحر[٣] أحاط بهذا الهواء[٤] والبحر الداخل[٥] إلى سبعة أبحر والثامن[٦]. [٧]قيل : وما بعد الثامن[٧]؟ قال : ثم[٨] انتهى الأمر.

[٢] وأخرج عن وهب قال: إنّها سبعة أبحر وسبع أرضين، والأرض[١] على ظهر الحوت، [٢]واسم الحوت[٢] بهموت.

[٣] وأخرج عن حسان بن عطية قال: بلغني أن مسيرة الأرض خمس مائة سنة[١]، وبحورها منها مسيرة ثلاث مائة سنة. والخراب مسيرة مائة سنة، والعمران مسيرة مائة سنة[٢].

[٤] وأخرج أبوالشيخ عن ابن عبّاس: إنّه سئل عن المدّ والجزر[١]، فقال: إنّ لله ملكًا موكلاً بقاموس البحر[٢]. إذا وضع رجله فاض. وإذا رفعها غاض. فذلك المدّ والجزر[٣].

[٥] وأخرج أبوالشيخ عن أبي[١] عمرو قال: تحت بحركم هذا بحر من نار، وتحت ذلك البحر [٢]بحر من ماء، وتحت ذلك البحر بحر من نار[٢-٣]، حتى عدّ سبعة أبحر من نار[٤] [٥]وسبعة أبحر من ماء[٥-٦].

[٦] وأخرج ابن أبي حاتم عن سفيان قال: بلغني أن البحر يخرج من زقّ[١].

[٧] وأخرج ابن أبي حاتم عن [١]عبدالله[١] بن عمرو رضي الله عنهما، [٢]قال: بلغني[٢] أن البحر زق[٣] بيد ملك[٤]. لو يغفل عنه الملك، لطم على الأرض[٥].

[٨] وأخرج ابن أبي حاتم عن كعب الأحبار رضي الله عنه، قال: إنّما يفصل [١]البحر الأرض[١] بمربط ثور.

[٩] وأخرج ابن أبي شيبة في المصنف عن عبدالله بن عمرو رضي الله عنهما، قال: ماء البحر لا يجري من[١] وضوء ولا جنابة. إنّ تحت [٢]الأرض نارًا، ثم ماء، ثم نارًا[٢].

الباب الثالث عشر

ما ورد في النيل[١]

[١] أخرج الإمام أحمد والحاكم وصححه عن أنس: إنّ رسول الله صلّى الله عليه وسلّم، قال[١]: رفعت إلى سدرة المنتهى في السماء السابعة. فرأيت[٢] يخرج من ساقها

نهران ظاهران ونهران باطنان. قلت: يا جبرئيل، ما هذا[٣]؟ قال: أما الباطنان ففي الجنة، وأما الظاهران فالنيل والفرات.

[٢] وأخرج مسلم عن أبي هريرة رضي الله عنه، قال: قال رسول الله صلّى الله عليه وسلّم، سيحان وجيحان [١]والفرات والنيل[١] كلّ من أنهار الجنة.

[٣] وأخرج الحارث بن أبي أسامة في مسنده[١] والبيهقي في البعث[٢] عن كعب قال: نهر النيل نهر العسل في الجنة، ونهر دجلة نهر اللبن في الجنة، ونهر الفرات نهر الخمر في الجنة، ونهر سيحان نهر الماء في الجنة.

[٤] وأخرج أبوالشيخ في العظمة عن الليث بن سعد قال: بلغني أنّه كان رجل من بني العيص يقال [١]له حائذ بن أبي[١] شالوم بن العيص بن إسحاق بن إبراهيم عليه السلام، خرج هاربًا من ملك من ملوكهم حتى دخل أرض مصر فأقام بها. فلما [٢]رأى أعاجيب[٢] نيلها، جعل [٣]الله عليه[٣] أن لا يفارق ساحلها حتى يبلغ منتهاه ومن حيث يخرج أو يموت. فسار[٤] عليه قيل[٥] ثلاثين سنة في الناس [٦]وثلاثين[٦] في غير الناس، وقيل خمسة عشر كذا [٧]وخمسة عشر كذا[٧] حتى انتهى إلى بحر أخضر. فنظر إلى النيل ينشقّ مقبلاً، وإذا رجل قائم[٨] يصلّي تحت شجرة تفاح. فلما رآه، استأنس به وسلّم عليه، فقال له: من أنت؟ قال: أنا [٩]حائذ بن أبي[٩] شالوم بن العيص. فمن أنت؟ قال: أنا عمران بن فلان بن العيص[١٠]. فما الذي جاء بك، يا حائذ؟ قال: جئت[١١] من أجل هذا النيل. قال: وأنا[١٢] جاء بي الذي[١٣] جاء بك، حتى انتهيت إلى هذا الموضع[١٤]. فأوحى الله إلى أن أقف هنا[١٥] حتى يأتيني أمره. قال له حائذ: أخبرني ما[١٦] انتهى إليك من أمر هذا[١٧] النيل؟ وهل بلغك في الكتب أن أحدًا من بني آدم يبلغه؟ قال: نعم، بلغني أنّ رجلاً من بني العيص يبلغه، ولا أظنه غيرك. قال: كيف الطريق إليه؟ قال[١٨]: سر[١٩] كما أنت على[٢٠] هذا [٢١] البحر فإنك ستأتي[٢٢] دابة ترى أوّلها ولا ترى آخرها، فلا يهولنك أمرها. وهي معادية للشمس إذا طلعت أهوت إليها لتلتقمها[٢٣]. وإذا غربت [٢٤]أهوت إليها[٢٤] كذلك. فاركبها تذهب بك إلى جانب البحر. فسر عليه، فانّك ستبلغ أرضًا من حديد. فإن جزتها وقعت في أرض من نحاس. فإن جزتها وقعت في أرض من فضة. فإن جزتها وقعت في أرض من ذهب. فيها ينتهي إليك علم النيل. فسار حتى

انتهى إلى أرض الذهب. فسار فيها حتى انتهى إلى سور من ذهب، [٢٥]شرفه من ذهب[٢٥] وقبة[٢٦] من ذهب لها[٢٧] أربعة أبواب. فنظر إلى ماء ينحدر من فوق[٢٨] ذلك السور حتى يستقر في القبة[٢٩]. ثم ينصرف في الأبواب الأربعة، فأمّا ثلاثة فتفيض في الأرض. وأمّا واحد فيسير على وجه الأرض، وهو النيل. فشرب منه. واستراح وأهوى[٣٠] إلى السور ليصعد. فأتاه ملك، فقال له: ياحائد، قف مكانك. فقد انتهى إليك علم هذا[٣١] النيل، وهذه الجنة، وإنما ينزل من الجنة.

[٥] وأخرج ابن أبي حاتم عن عبدالله بن عمرو رضي الله عنهما، قال: نيل مصر سيّد الأنهار سخّر الله له كلّ نهر من[١] المشرق والمغرب. فإذا أراد الله سبحانه أن يجري نيل مصر، أمر كلّ نهر أن يمده. فأمدّته[٢] الأنهار بماءها. وفجر الله له الأرض عيونًا. فإذا انتهى جريه[٣] إلى ما أراد الله، أوحى[٤] إلى كلّ ماء، فرجع إلى عنصره.

* * *

خاتمة

أخرج الطبراني عن مسلم الهجري[١] قال: قلت لعبدالله بن عمرو: مما خلق[٢] الخلق؟ قال: من ماء وريح ونور وظلمة. فأتيت ابن عبّاس رضي الله عنهما، فسألته عن ذلك. فقال: فيها كما قال عبدالله بن عمرو[٣] رضي الله عنهم[٤]، والله[٥] أعلم. [٦]وهذا[٧] ما انتهى إلينا من الهيئة السنية في الهيئة السنية[٦].

اختلافات النسخ

[٠] (١) ابتداء كما في ١١.
قال سيدنا ومولانا السح الامام العالم العلامة الرحلة المحقق مدير عصره المتقن الحافظ جلال الدين السيوطي الشافعي رحمه الله تعالى ونفع به امين: س.
قال الشيخ الامام الاجل جلال الدين رضي الله عنه ونفعنا به. بسم الله الرحمن الرحيم: جب.
قال الشيخ الامام العالم العلامة ابو الفضل جلال الدين عبد الرحمان بن الشيخ كمال الدين السيوطي رضي الله عنه: بب.
(٢) سيد الخلق: جا، بب، بت.
(٣) – وبعد: جا، با، بب، بت.
(٤) وانبعته: جب.
(٥–٥)– : جب.
(٦) ويقتبر: بت. // وبصير: بب.
(٧) وتسميته: جب.
(٨–٨) – : جب.
(٩) مرضيته: و.

الباب الأول
ما ورد في العرش والكرسي

[٢] (١) – والارض: بب.
[٣] (١) العصمة: بب.
(٢–٢) والعرش بالكرسي: جب.
(٣–٣) والملايكة: بب.
(٤–٤) متين: بب.

[٣] (٥) – نهر : بب.
(٦) يتلظى : اب ، بب.
(٧–٧) يلمع منه : جب. // تلتمع : بب.
(٨) حول : و.
(٩) السن : جب.
(١٠) تلك : با.
[٤] (١) + من : جب.
[٥] (١–١) – : جب.
(٢) – ارض : جا.
(٣) فلاة : جب.
[٦] (١) فيكون : جب.
[٧] (١) – قدر : با.
(٢–٢) الله : با.
(٣–٣) والعرش : با.
(٤) + عرش : و. // + جنب (نسبة؟) العرش كمثل قبة في صحرا : اب.
[٨] (١–١) – : با.
(٢) + ابن : بب.
(٣) العاص : با ، بب ، جب.
(٤) تحية : بب.
(٥) الملائك : با.
[٩] (١) عظمته : اب ، جب. // عطمه : و.
(٢) قوتك : با.
(٣) يخرج : جب.
[١١] (١) + قال : س.
(٢) + على : جب.
[١٢] (١) + ابو : جب.
(٢–٢) – : جب.
[١٣] (١) – قال : س.
(٢–٢) كالقنديل المعلق : ١١.
[١٤] (١) النفري : و. // النضري: با. // البصري : اب ، بب ، جب. // القصري : جا.

[١٤] (٢-٢) - : س.
(٣-٣) تنبا عليه هارون: اب، جا، جب، بت. // بينا عليه بهارون: بب.
(٤) - الصلاة و: با، بب، جب.
(٥) - وراءه و: بب.
(٦) -وهو: اا، با، بت، جا، جب. // الاصم: بب.
(٧) +قينس: جب.
(٨-٨) وخلق: جب.
(٩) +سبحانه: جب.
١٠) فزجها: بب.
(١١-١١) - : س.
[١٥] (١) اربعة: اا، اب، با.
(٢) - الله: با، بت، جب.
(٣-٣) -كل امة: بب.
(٤) السنة: بب.
[١٦] (١) لؤلؤ: س، و، با، جا. // + والعرش لولو: جا.
(٢-٢) - : اب، و.
(٣) لؤلؤ: س، با، جا.
[١٧] (١) -كان: س، جب.
(٢) تقطر: س، و.
(٣) فيه: با، جب.
(٤) فينبث: بت.
(٥) الاجساد: و.
[١٨] (١-١) واخرجا ايضًا: س.
[١٩] (١) - ملقاة: جب.
(٢) الفضل: س.
[٢٠] (١) تجعل: س، اا، اب، با.
[٢١] (١) الفزيامي: س. // الغرباني: و.
(٢-٢) - : اب.
(٣) ان يقدره: جب.
[٢٢] (١) -كاطيط: س.

[٢٢] (٢) الرخل : س. // الرحيل : و. // الرجل ، جا.
(٣) بما لملوك : اا ، اب ، و ، با ، جا.
[٢٣] (١) ببعضمن : اا.
(٢) المفازة : اا ، اب ، با ، بت ، جا.
[٢٤] (١) + وابن المنذر : و.
[٢٥] (١–١) – : بب.
(٢) – العرش : بب.
(٣) + والله اعلم ذكر : س ، و.
[٢٦] (١) عن : بت ، جا.
(٢) سبعين : اب ، بب.
(٣) + الف : اا ، با ، بب ، بت ، جب.
(٤) حجاب : اا ، با ، بب ، بت ، جب.
(٥) نار : س ، اا ، اب ، با ، جا.
(٦) نور : س ، اا ، اب ، با ، بب ، بت ، جا.
(٧–٧) – : و.
[٢٧] (١–١) – : و.
(٢) ظلمة : اب.
[٢٨] (١) – ابي : بت ، جا.
(٢) فانقض : جب.
(٣) وبينهم : س.
(٤) حجاب : جب. // الف حجاب : اا ، بت.
(٥) احديها : و.
[٢٩] (١) – موصولاً. // + ايضاً : جا. (٧).
(٢) – انس : س.
(٣) بمثله : با.
[٣٠] (١–١) خلقه جميع : جب.
(٢) باربعة : جا. // – باربع : و.
[٣١] (١) فما : جب.
(٢) تسمع : اب ، با.
(٣) حس : اب. // جنس : بب ، بت.

[٣١] (٤) الحجاب : بب.

[٣٢] (١) القرظي : س ، با. // الطرطبي : و .

(٢) حجاب : جب.

(٣-٣) - : اب.

[٣٣] (١) + ابن منبه : اب ، با ، بت.

(٢) العرش : بت.

(٣) + حملة : س ، اب ، با.

(٤) حجاب : جب.

(٥) حجاب : جب.

(٦) حجاب : جب.

(٧) حجاب : جب.

(٨) غلط : س ، جب.

(٩) و: با.

[٣٤] (١) (طبق) : بب ، جب. // الهواء : س ، اب ، بت ، جا.

(٢) قسطاط : بت ، جب .

(٣-٣ لم تر : و، با.// كم ترى : بت ، جا. // كم تر : بب.

(٤-٤) - : س.

[٣٥] (١) بين : اا ، بت ، جا ، جب.

(٢) ستة : اا ، با ، بت.

(٣) ثلاثون : جب.

[٣٦] (١) عبدالله : جب.

(٢) جزوا : جب.

(٣) جزوا : بب ، جب.

(٤-٤) العرش والعرش : بب.

(٥) جزوا : جب.

(٦) جزوا : بب ، جب.

(٧) جزوا : جب.

(٨) جزوا : جب.

(٩) - نور : جب.

(١٠) + والله اعلم : س.

الباب الثاني
ما ورد في اللوح والقلم

[٠] (١-١) ما جا في القلم واللوح : با . // ما جا في اللوح والقلم : بب ، جا .
(٢) + المحفوظ : جب .
[٣] (١) حسن : جا .
(٢) لمسير : س . // كمسيرة : ١١ ، اب ، با ، بب ، بت ، جا .
(٣) خلق : جا .
(٤-٤) - : س ، با ، بب ، بت ، جا .
(٥-٥) القيامة : جب .
(٦-٦) - : جب .
[٤] (١-١) اثنا وجها وجه من : جب .
(٢) + من : با ، جا +
(٣) - حمراء : با ، بب ، بت .
(٤-٤) - : اب .
(٥-٥) - : با ، بب ، جا .
[٥] (١) زمردة : جب .
(٢) وزبرجده : با .
(٣) + من : جا .
(٤) - نور : اب .
(٥-٥) وليلة ثلاث وستين مرة : جب .
(٦) سبعين : جا .
[٦] (١) + تحت العرش : ١١ ، اب ، با .
(٢) ستون مرة : جب .
(٣) + وهو على كل شيء قدير : جب .
[٧] (١) الغسلي : اب ، س . // القسملي : ١١ ، بت . // الغلي : و . // السلم : جب .
(٢) مكتوب : جب .
(٣) وترحم : بت .
[٨] (١-١) - : بب ، جا .
(٢) الايمان : جب .

[٨] (٣-٣) النبي : جب.
(٤) + فيه : اا، بب، بت، جا، س.
(٥) لواحدة : بب.
[٩] (١-١) - : جب، (ابن نفير؟).
(٢) + على : با.
(٣) تلك : جب.
[١١] (١) ما : جب.
(٢-٢) يوم القيام : جب.
[١٢] (١) وعظمة : اب، جب.
(٢) نقش : جا.
[١٣] (١) خلق : با، بب، بت، س. // - : جا.
(٢) - من : جب.
(٣) + من : جب.
(٤) مشيرة : بت.
(٥) فامر : بت.
(٦) + الله : اا، با، بب، جا، س.
(٧) يجري : جا.
(٨) بلغكم : بب.
(٩) و : جب.
[١٥] (١) سيد : جب.
(٢-٢) - : با.
(٣-٣) القلم : با.
(٤) + من : اا، بت.
(٥) + الله : با.
(٦) ويحفظ : اب. // ويحفض : بت.
(٧) + الباري جل جلاله : جب.
(٨) + يا رب : جب.
(٩) + اكتب : جب.
(١٠-١٠) يوم القيامة : اب.
(١١) سدت : جب.
(١٢) منها : با.

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(٢) وعجايبها : جب.
[١] (١-١) - : بب.
[٢] (١) رهاويه : جب.
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(٣) + رضي الله : جب.
(٤-٤) - : بب.
(٥-٥) - : با.
(٦) والارض : بب.
[٤] (١) كتف : اب.
(٢) - مسيرة : س.
(٣) كتف : اب.
(١-١) - : بب.
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(٣) + والحاكم وصححه : بت.
(٤-٤) والحاكم وصححه وابن ابي عاصم في السنه وابو الشيخ وابو يعلى وابن حزيمة والطبراني : جا ، و ، س.
(٥) + وابو الشيخ : اب ، با.
(٦-٦) - : بت.
(٧) عام : اب.
(٨) وبين : با.
(٩-٩) - : بت.
(١٠) - مسيرة : بب.
(١١) عام : جب.
(١٢) كتف : اب. // كنف : بب.
(١٣) + الى : بب.

[٤] (١٤) + الله : بب.
(١٥) بين : بت.
(١٦-١٦) - : س.
(١٧) اوعال جمع وعل سكون العين وهو بقر الوحش : اا، اب ، با.
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(١٨) + بلا كيف ولا تشبيه لا تدركه الابصار وهو يدرك الابصار : جب.
[٥] (١) - بنا : جا.
(٢) الغاية : اب ، جب. // الغيايه : با. // القيمة : بت.
(٣) + بيآين مثنيين تحت اسم السحابة : اا.
+ اسم السحابة : اب.
(٤) - فان : بت.
(٥) + قال : با.
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(٧) - مسيرة : اب ، جب.
(٨) سنوات : س.
(٩) - مسيرة : جب.
(١٠) - ثم : با.
(١١) + قال : با.
(١٢) - قال : بت.
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(١٤) قالوا : جا.
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(٢-٢) كتفها : اب.
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(٤-٤) - : جب.
(٥) - الدنيا : جا.
(٦) وكتف وكتف : اب.
(٧-٧) - : بت.
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(٢) + الانصاري : اب ، با.

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(٤) قصر : و. // بصر : بت.
(٥) - السماء : جب.
(٦) + وما بين الكرسي والماء مسيرة خمس مائة عام : جب.
(٧) + عز وجل بلا كيف ولا مثل : جب.
[٨] (١) قال : با، بت، جا، جب.
(٢) + ثم : بت.
(٣) + من : بت.
(٤) + ان : بت، جب.
(٥) قسمًا : بت.
(٦) قسماه : بت.
(٧) سبعة : اب، با.
(٨) + ظهر : جب.
(٩) - وهو : جب.
(١٠-١٠) صفا والصفا : بت. // ظفات والضفات : جب.
(١١) - والصخرة : جب.
(١٢) ذكر : اا، اب، با، بت، جا، س.
(١٣) واقواتها : جب.
(١٤) وسخرها : با.
(١٥) مع : و.
(١٦) - ثم : با، بت، جا، جب.
(١٧) سماء : جب.
(١٨) بزينة الكواكب : اب، با.
(١٩-١٩) من الشيطان : بت. // للشيطان : و.
[٩] (١) والارض : اا، جا، جب.
(٢) ملتقيتين : اب، با. // متلزقتين : جب.
(٣) فكانت : جب.
(٤) - فتقها : بت.
[١٠](١) + كائن : جا.
(٢) الارض : با.

[١٠] (٣) بست: بت، جب.
(٤) بست: جب.
[١١] (١) عن: اا، اب، و. // – عن: جب، س.
[١٢] (١) – السماء: اب.
(٢) فالارضين: و.
[١٣] (١) ارضيه: اب، با، بت، و.
(٢) باصبعيه: با.
[١٥] (١) بنائها: جب.
[١٦] (١) القسم: س.
(٢) برزة: اا. // بزت: جب.
(٣) مقوة: بت.
(٤) يراء: بت.
[١٧] (١) – قال: بت.
[١٨] (١) رهوايه: جب.
(٢–٢) – : حب. // + والترمذي: اا، اب، با.
(٣) + في الاوسط: جب.
(٤) + وابن ابي حاتم: بت.
(٥) سماء: جب.
(٦) + عنكم: جا.
(٧) من مرمرة: اب. // زمرمرة: بت. // مرمرت: جب.
(٨–٨) – : جب.
(٩) صحارا: اب.
(١٠) وما: اب.
(١١) شبطاطروس: اا. // ميطاطهوس: اب.
[١٩] (١–١) واه: و. // جيد: جب.
(٢) والسماء: بت.
(٣) رفيعا: و.
(٤) ازقلون: اب، با، و. // ارتلون: بت، جا.
(٥) درت: جب.
(٦) ماعون: اا، جب.

[١٩] (٧) ذهبة: جا، با، و.

(٨) ربعا: اا. ديعه. بت، جب. // حمرايعا: و.

(٩) رقنا: اا. // وفيا: اب. // دفيا: با. // دقتاء: بت، جا، جب.

[٢٠] (١) — هي: با. // هو: جا.

(٢–٢) فقال: جا.

(٣–٣) —: با.

[٢١] (١) العرني: اا، اب، با، جا، و. // العربي: بت، جب، س.

(٢) يخلق: جب، س.

(٣) — وماء: جب.

[٢٣] (١) — السماء: جا.

[٢٤] (١) عرس: جا.

(٢) بذيانها: با. // بغيانها: جب.

[٢٥] (١) — الحسن: اب.

[٢٧] (١) — والسماء: جب.

[٢٨] (١–١) —: جب.

(٢) — السماء: جا، س.

(٣) المزاح: اب، با. // الضراع: بت.

[٢٩] (١) عمر: جا.

(٢) + وابن العاصي: س.

(٣–٣) الارض: اا، جب.

(٤–٤) —: جب.

(٥) — من: جب.

[٣١] (١–١) —: جب.

(٢–٢) قارنها: اب، با.

(٣) دخانًا: بت.

(٤) فسهوبهن: و.

(٥) بعضها: جب.

(٦–٦) بعضها فوق: جب.

[٣٢] (١) حبان: جا.

(٢) الذي: جب.

[٣٢] (٣) + حيات اهل النار والتي تليها : حب.
(٤) فيها : اا ، اب. // – فيها : بت ، جا ، جب ، س.
(٥) فيها : اا ، اب ، و. // – فيها : بت ، جا ، جب ، س.
(٦) فيها : اا ، اب ، و. // – فيها : بت ، جا ، جب ، س.
[٣٣] (١) الدميادي : بت.
(٢) + اهل : اب ، با ، جب.
[٣٤] (١) الرابعة : جب.
(٢–٢) – : اا.
(٣) الفجار : اب ، با ، جب.
(٤) – تحتها : بت.
[٣٥] (١–١) – : جب.
[٣٦] (١) عبد : اب ، با.
(٢–٢) والسفلى على ارض : جب.
(٣) – والصخر : جب.
(٤) – فيها : جب.
(٥–٥) مصفد بالحديد : با ، بت ، جا. // –: جب ، و.
(٦) – امامه : بت.
(٧–٧) – : جب.
[٣٧] (١) – الارض : بت.
(٢) + لو : با.
(٣) تدرو : جب.
(٤–٤) – : اب.
(٥) ملكًا : اب.
(٦) اليه : اب. // – ملكا : جب.
(١–١) البزار بن : جب.
(٢–٢) عمران : و.
(٣) + عليه : س.
(٤) قال : جب.
(٥) هو : جب.
(٦) + الماء قيل أرأيت الماء على ما هو قال على صخرة خضرا قيل أرأيت الصخرا على ما هى قال على : با.
(٧) قال : اا ، اب ، با.

[٣٨] (٨) الهوى : جب.
[٣٩] (١) على : و.
(٢) اكف : جا.
(٣) – والملك : س.
(٤) على : جب. من : و.
(٥) الهوى : اا ، اب ، جب. // الهواء : جا ، س ، و.
[٤٠] (١) + وهي : جب.
(٢) السماء : جا.
(٣) سبع : اا ، جب. // سبعة : با ، بت ، س ، و.
[٤١] (١) + ابن : جب.
(٢) الى : جا.
[٤٢] (١) ابي : اا، و. // ابن : جب.
(٢) اذني : بت. // اذان : جب.
[٤٣] (١-١) – : جب.
(٢-٢) قال الارض حتى : اب.
(٣-٣) حتى قال : با.
(٤-٤) – : اا، بت ، و.
(٥) + قيل وما تحت الصخرة قال : بت.
(٦) الهوى : اا ، اب. // الهواء : با ، جا ، س ، و. // البها : جب.
(٧) والظلمة : اا ، و. // العظمة : جب ، س.
[٤٤] (١) الارضين : اا، اب ، با ، بت ، جا ، و.
(٢-٢) – : جا.
(٣) + الما قيل فما على الما قال : جا.
(٤) – هو : با.
[٤٥] (١) عن : جب.
(٢) عليها : س.
(٣) الارض : اا.
[٤٦] (١) الجرث : اا. // الحرث : با.
[٤٧] (١) – في : بت.
(٢) – كان : جب.
(٣) بما : با.
[٤٨] (١) – عن : جب.

[٤٨] (٢) عيلوة : اا . // عبيدة : اب ، با .
(٣) ست : جب .
[٤٩] (١) عن : جب .
(٢-٢) — : جب .
(٣) — السماء : س .
(٤-٤) — : با .
(٥) الارض : س . // الارضين الارض : و .
[٥٠] (١) — افضل : س .
(٢-٢) ومنه عصاة : با ، جب . // ومنها عصاء : و .
(٣-٣) — : با .
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[٣] (١-١) — : جب .
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[٤] (١) وحفظناها : اب ، س ، و .
[٥] (١-١) — : جب .
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[٦] (١-١) — : اب ، با .
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(٣) النار : اب ، بت ، و .
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[٨] (١) عباس : جب .
(٢) لمن : جب .
(٣) لمن : جب .

[٩] (١) + الى : اب ، و.
[١٠] (١) وقفاوهما : با ، جا.
[١١] (١) سودب : اب ، با.
(٢) الف : جب.
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(٧) – وعزّتي : جب.
(٨) به : جب.
[١٣] (١–١) – : اب.
(٢–٢) – : اب ، جب.
[١٤] (١) – طولها : ١١ ، اب.
(٢) عرض : ١١ ، اب ، جا ، جب ، س. // في عرض : بت. // في : و.
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[١٦] (١) – قدر : بت.
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(٢) تجري : اب.
(٣) الليل : جا ، جب. // بالليل : و .
[١٨] (١) يدور : بت ، و.
(٢–٢) – : با.
[١٩] (١) البصر : جب.
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(٢–٢) نضجهم من الحر : اب. // تصجهم الحر : بت. // تضجتهم الحر: جب.
(٣) + من : اب.
[٢٣] (١–١) فاذا : جب.
(٢) استغفت : بت. // استغفرت : جب.
(٣) عن : بت.
(٤–٤) وقالت : جب. // + قال الى ربها ولم اي ولاتي شيء تستغويني قالت اي الشمس استغفر فاني عبدت الح حسن : و (في الحاشية).
(٥–٥) – : با، بت، جا، س، و.
(٦) – لها : بت.
(٧–٧) دونك : و.
[٢٤] (١) فتردها : و.
(٢) ذبوب : بت.
(٣–٣) – : جا، س.
(٤) فيوذن : با، بت.
(٥) فتجس : بت.
[٢٥] (١–١) من طريقين: اا. // –: با، بب، جا.
(٢) ملك : جب، س.
[٢٦] (١) شمس : اا، با، س.
(٢) يوثر : اب، با.
(٣) يوثر: اب، با.
[٢٧] (١) شيء: جب.
[٢٨] (١–١) ملكان موكلنا : اب. // ملكان موكلان: با، بت، جا.
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(٣) وقفت : اب، جا، جب.
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(٥) – ساجدة : با. // سجدة : بت.
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(٧) امض حتى تمضي: اا.
(٨) سبع : اا، اب، با، بت، جا، و.
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(١٣) يوم برجا : جب.
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(٢) الخلاص : جب.
(٣) ملك : و.
(٤) – ماء : با.
(٥) لاحرقت : جب.
(٦) + اهل : اب.
(٧–٧) – : اب ، جب.
(٨) يسمع : و.
(٩) جواب : اا ، و. // وجوب : با ، بت.
(١٠) تسحب : جب.
[٣٠] (١) الشمس : و.
(٢) + في : و.
(٣–٣) – : اب.
(٤) – اليوم : س.
(٥) المتصل : جب.
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(٧) – اراهم : جا.
[٣١] (١) ايدي : اب. // ابزي : با ، بت. // اثري : جا. // انيري : و. // بري : جب.
(٢) برجال : بت.
(٣–٣) – : س.
(٤) برجال : بت.
(٥) + في : جب.

[٣١] (٦) – تغيب : اب .
[٣٢] (١) شعينة : بت . // شعيرات : جب .
(٢) ثلاثون : جب ، س .
(٣) – ثم : و .
(٤) تحول : بت ، جب .
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(٢) ستون : جب . تصلب : (في الحاشية) .
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كتاب الهيئة السنية في الهيئة السنيّة
للشيخ جلال الدين السيوطي

وهذه فهرست أبوابها :

THE ARABIC TEXT

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synonymous with *at-turāb*. But as a consequence the origins of Sun and Moon become even more mysterious.

As far as the elements are concerned, the above mentioned texts should be a warning not to assume that every discussion of the elements by Arab scholars presupposes an acquaintance with Greek philosophy.

of silver; one branch flows through the land of gold while the other, identical with the Nile, enters Egypt (*Le Livre de l'Ascension de l'Esprit* 123).

A wall of gold: See above al-Masʿūdī's story.

In Abū š-Šayḫ's *Kitāb al-ʿaẓama* the story continues: Ḥā'id wants to enter Paradise, inquires about the sphere of Sun and Moon and wants to ride on it around the world (vol. 78 v.).

XIII,5: As of everything else in nature, God is also the real cause of the flooding of the Nile. In the background, however, looms the theory of intercommunication of earthly rivers. Thus even the Indus is said to have the same origin as the Nile (see al-Masʿūdī: *Kitāb at-tanbīh wa l-išrāf;* transl. by Carra de Vaux: 83, + note 1). This theory is perhaps based on the fact that the same animals, especially crocodiles, are found in both rivers (cf. F. Krafft: *Geschichte der Naturwissenschaft* I, 160).

Conclusion: From what is creation made? — The four elements named (water, wind, light, darkness) may have been intentionally opposed to the four elements known from Greek philosophy. They are probably derived from Jewish speculations on creation; for they occur among the eight things supposedly created on the first day (heaven, earth, light, darkness, tohu, bohu, wind, water — cf. *Pirḳê de Rabbi Eliezer* 13 f.). They are the basic elements, if we disregard tohu and bohu; for heaven is made of light and earth of water. They are mentioned as such also by Muǧāhid, the early Qur'ān commentator (cf. C. Huart: *Le Livre de la Création* I, 145). Sufyān aṯ-Ṯaurī mentions five: Fire, light, darkness, water, and earth (see: *Tafsīr al-Qur'ān al-kabīr* 16:1:889, + note: Ibn al-ʿĀṣ: water, light, darkness, wind, and earth). This Ibn al-ʿĀṣ most probably is identical with the ʿAbdallāh b. ʿAmr of our concluding tradition, hence this is only a variant text. Note that Bardaiṣan has the same five elements as those mentioned by Sufyān aṯ-Ṯaurī (see H.J.W. Drijvers: *The Book of the Laws of Countries* 1).

Furthermore, in the note referred to above, the editor of Sufyān aṯ-Ṯaurī's *Tafsīr* quotes yet another tradition about the elements of creation; this, too, is derived from ʿAbdallāh b. ʿAmr and confirmed by Ibn ʿAbbās. It only mentions four elements: Light, fire, darkness, and earth (wet). The Arabic term translated here as "earth (wet)" is *aṯ-ṯarā*, and not *at-turāb*, as in the examples above. Referring back to the mysterious text about the origins of Sun and Moon (IV,6) the choice of the term *aṯ-ṯarā* is rather intriguing. There can be no doubt that it is here

river Sayḥān, the river of water in Paradise. The author of the tradition apparently deemed water as valuable as oil.

XIII,4: If the hero of this story is indeed a grandson of the biblical Esau, as the genealogy indicates, the discovery of the sources of the Nile would date back to a very early time. Unfortunately nothing seems to be known about the source of this story. Al-Masʿūdī, too, knows a story about the discovery of the sources of the Nile: but according to him the name of the discoverer was ʿImrān b. Ǧābir. Despite some variants, his story clarifies some elements of ours:

> Many persons believe the stories connected with this subject, whilst they are rejected by many sound men. We will not repeat tales like that of 'Imrán Ben Jábir, who is said to have reached the sources of the Nile, and to have crossed the sea on the back of an animal, laying hold of its hair. This, they say, was a marine animal, of such celerity that it accompanied the sun in its course. By seizing its hair 'Imrán crossed the sea, seeking the bed of the sun, at once he saw the Nile as it comes forth from golden palaces; they say also that the angel who guards the sources of the Nile gave him a bunch of grapes, and that he returned to the man who had seen him when he set out, to describe to him how he had managed to reach the Nile, but he found him dead. (A. SPRENGER: *El-Masʿūdī's Historical Encyclopaedia* I, 293 f.).

God determined for him: A deterministic way of saying that he made such a resolution.

A green sea: This may be the ocean as in al-Masʿūdī's story. But it could also be that the adjective "green", usually attributed to the ocean (cf. above III,16), is used here to emphasize the largeness of a lake.

An animal... a foe of the Sun: This immense sea-animal is probably none other than the sea itself (cf. Tiamat in the Akkadian creation epic *Enūma eliš; The Ancient Near East* I, 31 ff.).

The fact that the discoverer is directed to traverse this sea or lake obviously implies that the Nile comes from the other side. But there is no trace in this text of the theory of a subterranean channel carrying the waters of the Nile north into Egypt (cf. W. WOLSKA: *La Topographie Chrétienne* 267). Apparently the Nile flows through the "green sea".

A land of iron ... copper ... silver ... gold: Obviously a purely schematic division of the globe — the greater the distance, the more valuable the metals. Interestingly, Abū l-Farāǧ BAR-HEBRAEUS, as late as the thirteenth century, used silver and gold as the distinguishing attributes of the lands close to the sources of the Nile.

But in his geography the Nile issues from the waters of the mountain

understood as well. What is sought in *wuḍū'* cannot be mere physical purification, sea-water would do that, too. But sea-water is not "living water", it does not even produce vegetation. Therefore it cannot be a symbol of that new life sought in the rite of purification (cf. G. VAN DER LEEUW: *Religion in Essence and Manifestation* II, 343 f.). The sea remains under the spell of death and the forces opposed to the Creator.

XIII,1: The conception of the heavenly tree with four rivers issuing from its stem was probably borrowed from apocalyptic literature. Thus *The Book of the Secrets of Enoch* (p. 7 f.) contains a very similar text; the most obvious difference is that Enoch sees this tree already in the third heaven. He writes:

> And in the midst (there is) the tree of life, in that place, on which God rests, when He comes into Paradise. And this tree cannot be described for its excellence and sweet odour. And it is beautiful more than any created thing. And on all sides in appearance it is like gold and crimson and transparent as fire, and it covers everything. From its root in the garden there go forth four streams which pour honey and milk, oil and wine, and are separated in four directions, and go about with a soft course. And they go down to the Paradise of Eden, between corruptibility and incorruptibility. And thence they go along the earth, and have a revolution in their circle like also the other elements.

The two hidden ones: According to this tradition these two rivers do not seem to leave Paradise. — AḤMAD B. ḤANBAL: *Musnad* III, 164, — AL-ḤĀKIM: *al-Mustadrak* I, 81.

XIII,2: With the exception of the Nile, which here replaces the Tigris, these rivers occur already in *Genesis* 2,10-14. Due to the difference of language the first two have slightly different names: Pishon and Gihon. Whether the Nile or the Tigris are named as one of the four apparently depends on the geographical area in which this saying circulates. — The early geographer Ibn Rustah places the first two rivers in the vicinity of the Euphrates; for he writes:

> Le Saihan, le fleuve d'Adana et de Missisa, prend sa source en Asie mineure, et se jette dans la mer Méditerranée. — Le Djaihan prend sa source en Asie mineure, passe entre Missisa et Kafr-Baya, et se jette dans la mer Méditerranée. (in: *Al-aᶜlāq an-nafīsa;* transl. by G. Wiet, as *Les Atours Précieux* 101). MUSLIM: *Ṣaḥīḥ* 2183 (2839).

XIII,3: Cf. above XIII,1: The text quoted from *The Book of the Secrets of Enoch;* instead of the river which pours oil, we have here the

He continues to quote Ptolemy's figures, but leaves no doubt that he prefers the figures of Qatāda and Makḥoūl.

XII,4: Here again Muṭahhar b. Ṭāhir al-Maqdisī reviews several theories, but gives preference to the traditional ones:

> Le flux et le reflux ont amené diverses explications. Aristote prétend que la cause en gît dans le soleil qui meut le vent; lorsque celui-ci devient violent, il produit le flux, et le reflux quand il se radoucit. Kîmâos croit que le flux provient de l'eau des fleuves qui se déverse dans la mer, et le reflux de l'arrêt de ce déversement; quelques-uns ont dit que ce phénomène provient des mouvements et des repos alternatifs de la terre. Parmi les astronomes, il y en a qui expliquent le flux par le cours de la lune, et le reflux par son décours ... Certaines légendes rapportent que Dieu a un ange préposé aux mers; lorsqu'il plonge sa main dans la mer, celle-ci s'enfle, et se dégonfle quand il la retire. Si c'était vrai (et Dieu seul sait mieux la vérité!), il vaut mieux y croire que de pencher vers des explications qui ne renferment pas de vérité; et si quelqu'un exprimait l'idée que c'est cet ange qui fait souffler les vents, cause du flux, ou augmente le débit des fleuves, ou produit ce phénomène lors de la croissance de la lune, de façon à concilier les légendes et les opinions philosophiques, ce serait là une bonne doctrine; mais Dieu sait mieux la vérité! (C. HUART: *Le Livre de la Création* II, 43).

Cf. also E. WIEDEMANN: *Aufsätze zur arabischen Wissenschaftsgeschichte* I, 152.

XII,5: Cf. above XII, 1 and 2; and I,14.

XII,6: This and the following text probably stem from a more concrete description of what was called above the "enclosed ocean", "enclosed wave", or "wave held off from you" (cf. I,11; III,17; III,20; IV,35).

XII,7: Cf. above XII,6.

XII,8: Cf. above XII,3: The measures of the earth. In Kaᶜb's view, evidently, the sea is only slightly bigger than the earth.

XII,9: Only the second part of this tradition seems to have cosmological significance; it is a version slightly different from the tradition above in XII,5. — The first part obviously belongs into a legal or ritual context: Which water can be lawfully used to perform the purification rite prescribed before the official prayer and after some specified acts like sexual intercourse? If the reasons of the lawgiver were known, the cosmological sense of the ritual restriction might be

XI,5: Abū Qubays: As G. RENTZ writes in the *EI*[2] (I, 136), the age of this sacred hill east of Mecca is often underscored: "Adam and other ancients are sometimes said to be buried there. The hill's older name was *al-Amīn*, given because the Black Stone was kept safe there during Noah's Flood." (Cf. AL-QAZWĪNĪ: *K. ᶜAǧā'ib al-maḫlūqāt* I, 152).

XI,6: Cf. Sūra 16,15.

XII,1: Cf. above I,14. — New here is the interval of air.

XII,2: Cf. above I,14 and III,0; 1; 2; 3. On the back of the fish: Cf. above II,2 and III,36; 38. Bahamūt: Cf. Psalm 50,10 and Job 40,15. An animal with that name is also mentioned in *The Book of Enoch, or 1 Enoch* (p. 115). Being a male monster, it is there associated with the female monster Leviathan. But while the latter dwells "in the abysses of the ocean over the fountains of the waters", Behemoth is said to occupy "with his breast a waste wilderness". In none of these texts Behemoth is a fish. I assume, therefore, that Behemoth was confused with the cosmic dragon described above in II,2.

In *Midrash Kōnen* the great ocean is said to stand on the fins of the Leviathan (see A. WÜNSCHE: *Aus Israels Lehrhallen* III, 187).

XII,3: 500 years: Cf. above III,2. — *Midrash Kōnen* has a fairly similar text:

> Unsere Rabbinen haben gelehrt: Der Wohnkreis (Gesamtumfang) der Welt ist eine Reise von 500 Jahren. Ein Drittel ist Wüste, ein Drittel Bewohntes, ein Drittel Meer. Wie viel beträgt das Drittel? 166 Jahre und 8 Monate... Siehe, die Höhe der Welt von der Erde bis zu den Himmeln ist 500, und wie ihre Höhe ist ihre Länge... (A. WÜNSCHE: *Aus Israels Lehrhallen* 178).

Further, Muṭahhar b. Ṭāhir al-Maqdisī recorded such measures of the earth; as he says, people disagree:

> On n'est pas d'accord sur la mesure de la terre. Une tradition prétend que Makḥoûl aurait dit: «La distance entre la partie la plus éloignée du monde et la partie la plus rapprochée est de cinq cents ans; deux cents ans sont occupés par la mer, deux cents par une partie inhabitée, quatre-vingts ans par le territoire de Gog et Magog, et vingt ans par celui qu'occupe le reste des créatures". Qatâda aurait dit: "Le monde est de 24,000 parasanges; l'empire des Nègres est de 12,000 parasanges; celui des Grecs de 8,000, celui des Persans de 3,000, et celui des Arabes de 1,000 parasanges". Abdallah ben ᶜOmar aurait dit: "La partie habitée par les Nègres nus est plus considérable que le reste." (C. HUART: *Le Livre de la Création* II, 40 f.).

IX,11: Sūra 11,44. — Concerning *Qausu Quzaḥa* see above IX,9. The text still retains the marks of the pre-Islamic conception of the weather-god Quzaḥ, hanging up his bow in the clouds after the thunderstorm, which has been transformed into the biblical notion of a security. The bow could remain a bow, but string and arrow had to be removed. See M. Höfner: "*Quzaḥ*"; in: *Wörterbuch der Mythologie* 426.

X,0: It is somewhat surprising to find a chapter dealing with earthquakes in a context of meteorology. But according to F.X. Kugler: *Sternkunde und Sterndienst in Babel* (II. Buch, I, 127), the ancient Babylonians believed that the weather-god also caused the earthquakes and the ensuing destructions. Apparently the Babylonians were not alone in linking earthquakes with meteorological phenomena: Aristotle did so, too (*Meteorologica* II,7 + 8; 365 a 14 – 369 a 9).

X,1: A mountain called *Qāf:* Probably it is identical with the mountain of Diamond in I,14. But according to XI,1 of this treatise it consists of an emerald. Down to the rock: Cf. above III,23; 34; 38; 39; 40; 41; 43; 44; 45; 46.

As the text itself observes, the whole region around the town is set in motion. Apparently the author of this theory realized that it could not explain locally limited earthquakes. O. Gilbert has shown that the Greeks, too, found it difficult to explain such restricted earthquakes (*Die meteorologischen Theorien des griechischen Altertums* 293 ff.). The town moves, but not the town (itself): The Arabic construction with *dūna* is somewhat obscure, but this seems to be the meaning.

XI,1: Cf. above X,1. —Aš-Šahrastānī, in one of his harmonizing explanations of medieval texts, identifies this mountain *Qāf* with the earth shadow cast into surrounding space (see *Al-Hay'a wa l-Islām* 160 ff.). But his arguments are not convincing.

The sides of heaven: In the background is the image of the vault of heaven, the firmament as a cupola-structure (cf. above III,14 and 15; Sūra 2,22).

XI,2: Sūra 38,32. — Cf. above IV,35: *vīlūn* in Talmudic texts.
A green mountain: Cf. above X,1 and XI,1.
The green colour of the sky: Cf. above III,16.

XI,3: On a green rock: Cf. above III,23.

XI,4: The mountains: Cf. above III,8 and below XI,6.– For a similar line of comparisons, but with a different ending, see above VII,3.

the matter of the *ṣāᶜiqa* is dense and can thicken to the point of becoming stone.

IX,1: Cf. above I,8. — In Egypt the snake was the symbol for stars (see F. Boll: *Sphaera* 172).

IX,2: Cf. above I,8.

IX,3: The reptiles: Instead of one snake, there are now several. Or should we think of phoenixes and chalkadri here? (Cf. above VIII,17).

IX,4: The gates of heaven: The idea is probably taken from *The Book of Enoch, or 1 Enoch* (p. 163 ff.). Beneficial and destructive winds, snow, rain, dew, and locusts, etc., all have their special gates in heaven. Cf. al-Buḫārī: *al-Adab al-mufrad* 268:328 nr. 765.

IX,5: Through which it breathes: Cf. above III,8 and VI,12. According to Aristotle's *Physics* (213 b 22-27) the Pythagoreans "held that void exists and that it enters the heaven itself, which as it were inhales it, from the infinite air." (Cf. J.A. Philip: *Pythagoras and Early Pythagoreanism* 64 and 73). The idea was also publicized through the *Placita Philosophorum* (H. Daiber: *Aetius Arabus* 128 f.).

IX,6: Cf. above IV,21: The discussions about which part of the sky was right and which one left. According to the *Placita Philosophorum* (H. Daiber: *Aetius Arabus* 146 f.), the East was commonly considered right, and the West left. The meaning appears to be that this gate opens towards the West; cf. the apertures of the Sun in IV,30.

IX,7: Cf. above IX,6. — The security against drowning: Cf. *Genesis* 9,14. — al-Buḫārī: *al-Adab al-mufrad* 268:328 nr. 765.

IX,8: The gate of heaven: Cf. above IX,5.
A security: Cf. above IX,7. — al-Buḫārī: *al-Adab al-mufrad* 269:329 nr. 767. The place where the Sun rose: Obviously it was considered a place only after God had divided the sea and dried the ground so that His people had a safe passage. Cf. Abū Nuᶜaym: *Ḥilya* I, 320.

IX,9: Actually Quzaḥ was a pre-Islamic deity (cf. the article "*Ḳaws Ḳuzaḥ*" by T. Fahd and E. Wiedemann, in: *EI*² IV, 804 ff). Abū Nuᶜaym: *Ḥilya* II, 309. A security: Cf. above IX, 7.

IX,10: Cf. above IX,7. — See al-Ḥākim: *al-Mustadrak* III, 149 (instead of *al-qaus* here *an-nuǧūm*).

VIII,10: IBN ABĪ D-DUNYĀ: *Kitāb al-maṭar* fol. 67 v.

VIII,11: Rūfā'īl: Probably the angel Raphael (cf. above VIII,7, where Michael is said to be in charge of raindrops and vegetation).

VIII,12: Cf. above VI,25 and VII,21; the wind there has apparently been replaced by an angel here. Note that here the verb *saᶜqat* is used as we would expect according to E. Wiedemann's distinction (cf. above VIII,6 and 9).

VIII,13: This tradition is indeed quoted by IBN ABĪ D-DUNYĀ, namely on fol. 64 v. of his *K. al-maṭar;* however, he speaks of an angel urging on the clouds *(yazğuru as-saḥāb)*. — AL-BUḪĀRĪ: *Al-Adab al-mufrad* 252:300 nr. 722. — AṬ-ṬABARĪ: *Tafsīr* I,341 nr. 436.

VIII,14: Cf. above VIII,12. — AṬ-ṬABARĪ: *Tafsīr* I,339, 343.

VIII,15: Cf. above VIII,4. — It is curious how an angelic explanation of thunder can be coupled with such a rational element as the collisions of the clouds.

VIII,16: AṬ-ṬABARĪ: *Tafsīr* I, 344 nr. 446.

VIII,17: Lightning here is described as one of the beings under God's throne in Ezekiel's vision (Ezekiel I,10). Verse I,14 actually describes how these four living creatures "darted to and fro, like a flash of lightning". Enoch had a similar vision of such beings; he describes them as follows:

> And I looked and saw other flying creatures, their names phoenixes and chalkadri wonderful and strange in appearance, with the feet and tails of lions, and the heads of crocodiles; their appearance was of a purple colour, like the rainbow; their size nine hundred measures. Their wings were like those of angels, each with twelve, and they attend the chariot of the sun, and go with him, bringing heat and dew as they are ordered by God. (*The Book of the Secrets of Enoch* 12 ff.).

VIII,18: This curious theory is probably based on the straightforward observation that hail falls during thunder-storms.

VIII,19: Cf. above III,20; and VIII,12.

VIII,20: Oceans of fire: The source is probably *The Book of Enoch, or 1 Enoch* (p. 34).

VIII,21: Cf. above VIII,6: According to E. Wiedemann's theory,

mark for the curious reader. The idea of thunder being an angel probably comes from the same source. — Cf. AḤMAD B. ḤANBAL: *Musnad* I, 274. — AT-TIRMIḎĪ: *aṣ-Ṣaḥīḥ,* Tafsīr S. 13,1 (II, 190).

VIII,4: With the praise-formula: The idea of thunder praising God is reminiscent of the *Song of the Three Young Men* (51). Cf. above VIII,3.

VIII,6: As mentioned above in IV,7, the angels are created from fire. — It is interesting that according to this text one sees the *ṣawāʿiq*, while the Qur'ānic verse in the beginning of the chapter describes how people block their ears against them. In the first instance one might translate the word with "lightning strokes", but for the Qur'ānic verse "thunderclaps" seems more appropriate. E. Wiedemann has tried to elucidate the difference between the various forms of lightning and reached the following conclusions:

> Für den Unterschied zwischen al Barq (Blitz) und al Sâʿiqa (Blitzschlag mit Donnergekrach, der einschlägt) ergibt sich nach der Berliner Handschrift (We 1813) folgendes: Während der Blitz (Barq) leuchtender Rauch, der in den Teilen der Wolke verteilt ist, ist, leuchtet der Blitzschlag auf einmal auf, dabei sind die Teilchen vereinigt und er tritt nur auf einer Seite im Unterschied vom Blitz aus. Die Materie des Blitzes ist fein, die des Blitzschlages dicht. Der Rauch, der die Materie des Blitzes bildet, wird, wenn er in der Wolke längere Zeit verweilt, zu Stein (Donnerkeil!) und steigt mit dem Blitzschlag herab und richtet grossen Schaden an allen Körpern an, durch die er hindurchgeht. (E. WIEDEMANN: *"Über die Dimensionen der Erde nach muslimischen Gelehrten"* 254, note 2).

VIII,7: Cf. above VII,27. — According to a tradition in IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar* (fol. 61 v) the angel Michael is in charge of raindrops and vegetation.

VIII,8: Cf. above VIII,4.

VIII,9: The word here used for "lightning" is *al-barq*, which does not seem to agree with E. Wiedemann's distinction (VIII,6 above). For the image of lances of fire would be better expressed by *aṣ-ṣāʿiqa*. Cf. this vision of Enoch:

> And I saw the places of the luminaries [and the treasuries of the stars] and of the thunder, [and] in the uttermost depths, where were a fiery bow and arrows and their quiver, [and a fiery sword] and all the lightnings. (*The Book of Enoch*, or *1 Enoch* 38).

Cf. AṬ-ṬABARĪ: *Tafsīr* I, 343 — AL-BAYHAQĪ: *as-Sunan al-kubrā* III, 363.

VII,32: This seems to be the highest place of the ice found in Arabic literature. According to *The Book of the Secrets of Enoch* (p. 5) "the treasuries of the snow and ice" are in the first heaven, and according to the *Testaments of the Twelve Patriarchs* (Levi 3), they are in the second heaven. In Kaᶜb's view it is apparently the long fall that makes ice harmless: Does he mean the slowly falling snow?

VII,33: This text and the following one seem to be the only ones among the many texts speaking of the various heavens that mention earthly animals as living in these upper regions. The difference between salt- and sweet-water animals is not even heeded here, unless the waters of the lowest heaven are to be understood as identical with al-Bākī, which according to I,14 contains sweet-water. Ibn ᶜAbbās, when pressed for an answer, stayed within his cosmology and did not introduce a new theory, such as that of spontaneous generation. In Arabia much was known on frogs (see AL-QAZWĪNĪ: *K. ᶜAǧā'ib al-maḫlūqāt* I, 138 ff.).

VII,34: Cf. above VII,33. — The people of Noah: cf. Sūra 29,13. The idea that this water "under this heaven" is the location of punishment is unusual. But *The Book of the Secrets of Enoch* has a parallel text about "the prisoners suspended, reserved for (and) awaiting the eternal judgement" in the second heaven (p. 6). These prisoners are probably the fallen angels. Salmān al-Fārisī apparently has this text in mind, but did not get it quite right.

VII,35: Originally this must have referred to Adam's tallness. Thus in Jewish literature it is said that he "reached from the earth to the firmament" *(The Book of the Secrets of Enoch* 40, note 11). The text probably inspired Ibn an-Nafīs to assert that Kāmil must have had a very big body (M. MEYERHOF and J. SCHACHT: *The Theologus Autodidactus of Ibn al-Nafīs* 40).

VIII,1: Sūra 2,19.

VIII,2; Sūra 13,12.

VIII,3: The Jews said: In the traditions this phrase is often used to establish a connection with Biblical revelation, being hardly more than a literary device. Here, however, the phrase may have a historical basis, namely a passage in the Ethiopic Enoch, which alludes to "the secrets of the thunder, and how when it resounds above in the heaven, the sound thereof is heard" (*The Book of Enoch, or 1 Enoch* 113). But Enoch only says that he saw these secrets and leaves them unexplained, a question-

(cf. O. GILBERT: *Die meteorologischen Theorien des griechischen Altertums* 395).

VII,24: In them is your sustenance: In the desert it is obvious that there is neither vegetation, nor food, without rain.

VII,25: Clearly, rain is God's special gift, the symbol of all others. — AŠ-ŠĀFIʿĪ: *al-Umm* I, 224. IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar* has a similar text (fol. 60r).

VII,26: God is above time; He is the real cause of all natural events. The statement underscores the principle of radical monotheism, it does not refer to amounts of annual precipitation.

VII,27: Cf. above VII,26. In this statement, however, the idea of keeping records entered, an angel being charged with that office. This idea may be inspired by chapter 40 of *The Book of the Secrets of Enoch* where Enoch relates how he himself wrote down such matters (pp. 54f.).

But there are passages in IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar* that suggest that records of annual rainfall may have been made already under the Umayyad administration (cf. fol. 52 r. — 53 v.).

VII,28: Cf. above VII,2. — IBN ABĪ D-DUNYĀ: *Kitāb al-maṭar* fol. 63 r.

VII,29: The quantity of rainfall is not the only factor in determining its value for vegetation; this must be the underlying observation. — IBN ABĪ D-DUNYĀ: *Kitāb al-maṭar* fol. 51 r.

VII,30: Nothing is known about the scientific interests of the famous Umayyad prince Ḫālid b. Yazīd (d. 85 H./704 A.D.) in meteorology. But Ibn Ḫallikān calls him the most learned of the Qurayš in *all* sciences; and AL-ʿASKARĪ, among other authors, mentions in his *Kitāb al-awā'il* that Ḫālid b. Yazīd was the first to have astrological and medical books translated (Ms. Istanbul, Hekimoğlu 689; fol. 191 r.; in the new edition by as-Sayyid Asʿad Ṭarābzūnī al-Ḥusaynī; Medina, s.a., on p. 304; II, 145 in the edition of M. al-Miṣrī and W. Qaṣṣāb, Damascus 1975. — See, however, M. ULLMANN's recent article: *"Ḫālid ibn Yazīd und die Alchemie: Eine Legende"*). In any case, if this statement about rain is really by him, it shows more sophisticated reflection and observation than all the others contained in this chapter.

VII,31; Cf. above VII,15.

indicates that the statement is intended to islamicize natural forces by making Allāh their real cause. — AḤMAD B. ḤANBAL: *Musnad* 5, 435.

VII,8: The people of the Flood: The sinful contemporaries of Noah (cf. Sūra 29,13 f.; cf. above VII,5).

VII,10: One would assume that in a desert area "plenty of rain" is something to be looked forward to. But the verb used here definitely means "to consider as a bad omen". It remains uncertain, unfortunately, to which region this prediction is supposed to apply.

VII,11: Cf. above VII,2 and below VII,13. Since rain is such a heavenly blessing, the clouds apparently are believed to mark the area that is to receive it.

VII,13: Cf. above VII,2 and 11.

VII,14: Cf. above VII,2,11 and 13. — Like the dung: The basic idea is probably the same as in VII,2, namely that the rain fertilizes the earth.

VII,15: Sūra 39,21. — It is remarkable that aš-Šaᶜbī emphatically adopts the meteoric theory of the origin of water on earth against the prima facie meaning of the Qur'ān and ordinary appearances. He shares this theory with many Greek philosophers (cf. O. GILBERT: *Die meteorologischen Theorien des griechischen Altertums* 405 ff.).

VII,16: Sūra 69,11 and 69,6 (cf. *The Book of the Secrets of Enoch* 54 f).

VII,17: With the knowledge of the keepers: They have a remarkably important role, presumably at God's side. Since they — endowed with knowledge — keep a record of the celestial waters one is inclined to regard them as persons, probably angels. The vocalization then would be *al-ḫuzzān*. But the continuation of the text seems to indicate that it refers to reservoirs (*al-ḫazzān*. A similar conception is found in *The Book of the Secrets of Enoch* (p. 54 f.).

VII,18: Probably this statement is again based on the notion of rain making the earth fertile (cf. above VII,2 and VII,14; below VII,20).

VII,20: Cf. above VII,2,14 and 18.

VII,21: Cf. above VI,25 and Sūra 30,46.

VII,22: This description of the wind driving the clouds away from the edge of heaven and earth closely resembles early Greek conceptions

function in this context seems to be different from the one indicated by its name and the Qur'ānic verse. By contrast the other two winds are clearly named after the action they are doing.

He sends the pollens: Cf. above VI,18. — Sūra 15,22. Cf. AṬ-ṬABARĪ: *Ǧāmiʿ al-bayān* XIV, 21.

VI,26: The wind has a wing: Cf. above VI,5. The Moon retreats into a covering of water: This is probably a fragment of a theory of the lunar phases or eclipses (cf. above IV,35).

VII,1: Sūra 30,48. — This is probably influenced by the discussion about the earth or the sea being the source of rain and hence of all other water (see O. GILBERT: *Die meteorologischen Theorien des griechischen Altertums* 393 ff. — Further: H. DAIBER: *Aetius Arabus* 172 f., III, 4,3.5). — In his *K. ʿAǧā'ib al-maḫlūqāt* I, 93 f.) AL-QAZWĪNĪ offers an interesting compromise solution: On a hot day very fine water particles rise from the sea, and from the earth dust particles, They collect in high altitudes, the water particles turning into rain and the dust particles into wind. But he probably adopted this theory from Greek meteorology (see O. GILBERT: ibid., 523 and 465 ff., especially Aristotle's theory).

VII,2: Cf. below VII,11 and 13. The source of rain is in this text the ocean under the throne (cf. above I,11 and below VII,33 and 34). The idea of the wind carrying the water down from heaven and pouring it out on the clouds like seeds is intriguing. It agrees with the explanation above in III,39 why the "sterile wind" is sterile. Apparently the wind is thought to be some sort of animal or angel.

VII,3: The ten mountains: It seems noteworthy that the Ethiopic Enoch always speaks of seven mountains (*The Book of Enoch, or 1 Enoch* 40 f.; 52; 59; 166).

The statement about the clouds and the wind is clearly the only reason why this text is included here.

VII,4: Sūra 51,2.

VII,5: The clouds are the sieve of the rain: Elsewhere Kaʿb is quoted as saying that the ice is coming down from the fourth heaven (below VII,32). Perhaps the clouds are supposed to protect mankind from that ice. — Or is it their function to regulate the downpour of rain and to prevent flooding (cf. below VII,8)?

VII,7: IBN ABĪ D-DUNYĀ quotes this tradition with trivial differences on fol. 64 v. of his *Kitāb al-maṭar* (Ms. Köprülü K. 388, 3). The context

VI,22: *Aš-Šamāl* is probably said to have this effect on account of the dry heat which it picks up when it passes over the northern deserts.

VI,23: Cf. above VI,22; unless "the wind" again refers to *aš-Šamāl,* the reason is probably the movement of the air alone.

VI,24: The first part of the text is strongly reminiscent of a description of the winds in the Ethiopic Enoch, probably its ultimate source:

> 1. I saw the treasuries of all the winds; I saw how He had furnished with them the whole creation and the firm foundations of the earth. 2. And I saw the corner-stone of the earth: I saw the four winds which bear (the earth and) the firmament of the heaven. 3. And I saw how the winds stretch out the vaults of heaven, and have their station between heaven and earth: these are the pillars of the heaven . 4. I saw the winds of heaven which turn and bring the circumference of the sun and all the stars to their setting. 5. I saw the winds on the earth carrying the clouds: I saw the paths of the angels: I saw at the end of the earth the firmament of the heaven above. 6. And I proceeded and saw a place which burns day and night, where there are seven mountains of magnificent stones, three towards the east, and three towards the south. 7. And as for those towards the east (one) was of coloured stone, and one of pearl, and one of jacinth, and those towards the south of red stone. 8. But the middle one reached to heaven like the throne of God, of alabaster, and the summit of the throne was of sapphire. *(The Book of Enoch, or 1 Enoch* 39-41).

One wonders whether there is also a connection with the cosmic whirl-winds which according to Anaximander and Anaxagoras move the stars (cf R. EISLER: *Weltenmantel und Himmelszelt* I, 93, note 4).

Aš-Šamāl passes through the garden of ᶜAden: Since it is the northwind, this garden must be Paradise as above in VI,18. That it has its own distinctive scent is, of course, a new observation.

The directions by which the winds are defined are in this passage somewhat confusingly determined. Apparently *ḥadd* must be interpreted as the place of origin.

The *kursī banāt naᶜš* used to fix the *ḥadd* of the northwind is a group of stars in *Ursa Maior* called *sarīr banāt naᶜš* in AL-QAZWĪNĪ's *K. ᶜAǧā'ib al-maḫlūqāt* I, 30), situated "at the throat, the chest and the two front knees". It is curious that not simply the Pole-star is used as in VI,16 above.

VI,25: *Al-Mubaššira:* Cf. above VI,10 and Sūra 30,46. But its

VI,13: The fact that only four winds are mentioned here shows that not they but the four cardinal directions are of concern in this text. After the Kaᶜba itself became the center of all directions it is difficult to conceive that it was built in relation to only one of them.

VI,14: The directions of *aṣ-Ṣabā* and *ad-Dabūr* show that the author of this statement was situated west of Mecca.

VI,15: That *al-Qabūl* replaces *aṣ-Ṣabā* as the eastwind is less significant than the definition of *an-Nakbā'* as blowing from the four directions (cf. above VI,12). Is this perhaps the whirlwind?

VI,16: Since the rising of Canopus is considered, Ibn ᶜAbbās must have tried to introduce more exact definitions of the directions by pointing to the time-factor. Winds and directions change when the Sun travels south.

VI,17: The reason must be the same as in the following text.

VI,18: IBN ABĪ D-DUNYĀ's *Kitāb as-saḥāb* (= The Book of the Clouds) may be only part of the *K. al-maṭar;* in any case, the fragment is quoted there on fol. 69 r. The contrasting description of the two winds is obviously based on the local observations of the Arabs; in the desert pollens must appear to be gifts from Paradise. The place of Paradise and Hell is somewhat intriguing. But this fragment seems to agree with *The Book of the Secrets of Enoch* (pp. 7 ff.): In the third heaven Enoch is first led into a beautiful garden, and then to a terrible place in the northern region where the evil-doers are tortured. That Hell is in the northern region was therefore probably the common view.
Cf. AṬ-ṬABARĪ: *Ǧāmiᶜ al-bayān* XIV, 22.

VI,19: The spirit came to you: The best manuscripts have *ar-rūḥ* (= the spirit), the others *ar-rīḥ* (= the wind). The meaning, nevertheless, is probably the same. As O. Eissfeldt observes, the *rūaḥ* in Gen. 1,2, too, should be understood as "wind" (*"Das Chaos in der biblischen und in der phönizischen Kosmogonie"* 258). Cf. AL-BUḪĀRĪ: *At-Ta'rīḫ al-kabīr* III, 1 p. 347.

VI,20: Cf. also above VI,19.

VI,21: Apparently the southwind usually brings rain with it in one area or the other (cf. IBN QUTAYBA: *K. al-anwā'* 164: "Rain comes with *al-Ǧanūb*". — And AL-QAZWĪNĪ: *K. ᶜAǧā'ib al-maḫlūqāt* I, 96).

D-DUNYĀ's *Kitāb al-maṭar* fol. 69 + 71. That the winds are kept in treasuries is also the view of the Ethiopic Enoch (*The Book of Enoch, or 1 Enoch* 39 f.).

VI,9: Cf. above VI,8.

VI,10: It is interesting that seven winds are already known in the Akkadian Creation Epic *Enūma eliš* (see *The Ancient Near East* 32). — The Ethiopic Enoch distinguishes between four winds of blessing and prosperity and eight hurtful winds: "... when they are sent, they bring destruction on all the earth and on the water upon it, and on all who dwell thereon, and on everything which is in the water and on the land" (*The Book of Enoch, or 1 Enoch* 163 f.).

IBN ABĪ D-DUNYĀ quotes this text in his *Kitāb al-maṭar* with trivial variances on fol. 73 r. (Ms. Köprülü K. 388, 3). But on fol. 72 v. he has a similar one derived from Ibn ᶜAbbās; there the names *al-Munširāt* and *ar-Ruḫā'* replace *an-Nāširāt* and *aḏ-Ḏārīyāt* respectively. *An-Nāširāt* is mentioned in Sūra 77,3; *al-Mubašširāt* in Sūra 30,46; *al-Mursalāt* in Sūra 77,1; *aḏ-Ḏārīyāt* in Sūra 51,1; *al-ᶜAqīm* in Sūra 51,41; *aṣ-Ṣarṣar* in Sūras 69,6; 41,16 and 54,19; *al-ᶜĀṣif* in Sūra 10,22 and *al-Qāṣif* in Sūra 17,69. That all these eight winds are mentioned in the Qur'ān and none is defined by the direction from which it is blowing indicates that they have their place in the commentaries of the Qur'ān, but not in meteorology. Their number was probably adapted to the common system of winds. Thus already Aristotle considers eight winds (see O. GILBERT: *Die meteorologischen Theorien des griechischen Altertums* 544 ff.).

VI,11: Cf. above VI,10: The second text from Ibn Abī d-Dunyā.

VI,12: This text enumerates the common meteorological winds known to the Arabs. The definition of *al-Ǧanūb* and *aš-Šamāl*, the south- and the northwind, as left and right of the *Qibla* indicates that it originated in a region east of Mecca. But *Qibla*, again, may have an astronomical-geographical meaning (cf. above IV,19). The same tradition is derived from a certain Ḫušnām of Balḫ in IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar* fol. 72 v.); the transmittors — among them a certain Abū Maᶜšar, who may or may not be the famous astrologer — obviously were so faithful to their sources that they left the adjectives unchanged. To find a wind, *al-Qā'im*, listed as "the breathing of creation" is highly interesting. It probably refers to the cosmic breathing (cf. above III,8, with the parallels in Greek philosophy indicated in the commentary; and below IX,5 of the present treatise).

V,5: J. VAN ESS, in his recent book *Zwischen Ḥadīṯ und Theologie* (p. 75 ff.), discussed this tradition in detail and placed it into its context. — Cf. also the extensive materials collected in R. EISLER's *Weltenmantel und Himmelszelt* II, esp. 513 ff. AL-BUḪĀRĪ: *Al-Adab al-mufrad* 269:331 nr. 770.

VI,1: In a rare display of critical attitude Nūḥ b. Abī Maryam is accused of being a *"waḍḍāᶜ"*, that is according to DOZY's *Supplément* an inventor of traditions. Muṭahhar b. Ṭāhir al-Maqdisī has the same text, but he interprets the measures in his own way:

> Dieu, quand il voulut créer l'eau, créa d'abord de la lumière un corindon vert, et il lui donna telles qualités de longueur, largeur et profondeur qu'il connaît seul.

But a few pages later he says that water was the first:

> La première chose créée ici-bas fut l'eau et l'air, comme le dit Modjâhid; la terre fut créée de l'eau; ce sont là les bases du monde; puis la lumière et les ténèbres. (C. HUART: *Le Livre de la Création* 138 and 145).

It is interesting to note that according to Empedocles' cosmology water was produced by pressurizing the earth (H. DAIBER: *Aetius Arabus* 142 f., II,6,3). — Cf. also A.J. WENSINCK: *"The Ocean"* 6. Further, cf. above III,8.

VI,2: Cf. above III,8. — ṬABARĪ: *Tafsīr* XV,249. AL-ḤĀKIM: *Al-Mustadrak* II,341.

VI,3: Cf. O. EISSFELDT: *"Das Chaos in der biblischen und in der phönizischen Kosmogonie"* 258 ff.

VI,4: Armies: Probably they are called "armies" because God uses them to carry out His punishment (cf. the Qur'ānic stories of the Flood and the destruction of the people of ᶜĀd by a devastating wind: Sūras 29,13 ff., 41,15; 46,20 ff.; 69,5).

VI,5: This text seems to describe pictorial representations of the wind-god as known from Syria (cf. E.A. WALLIS BUDGE: *The Book of the Cave of Treasures* 30).

VI,6: Cf. above VI,4. — Sūras 41,15; 46,20 ff.; 69,5.

VI,8: The sterile wind: Cf. above III,32. It is supposedly called "sterile" because it never carries rain and pollens as the other winds do (cf. below VI,18,25). This is the explanation of aḍ-Ḍaḥḥāk in IBN ABĪ

early expert of the Arabic language, al-Anṣārī (d. 182 H./798 A.D.) uses "*maġīb*" (= absence) instead and explains it as the period of "some fifty nights" during which the Pleiades cannot be seen. And AL-QAZWĪNĪ, in his *K. ᶜAǧā'ib al-maḫlūqāt* (p. 43), uses the term *"istisrār"* (= hiding). The Arabs believed that this was the time most plagued with disease (Abū Yūsuf Yaᶜqūb b. Ibrāhīm AL-ANṢĀRĪ: *K. al-Āṯār;* ed. by Abū l-Wafā; p. 205, nr. 917. He actually says: Between rising and setting!). — For the text see AṬ-ṬABARĪ: *Ǧāmiᶜ al-bayān* XXX, 352.

IV,48: The star of the early morning: This, again, must be the constellation of the Pleiades. When the Sun has passed them on its course through the ecliptic they re-appear in the eastern sky shortly before sunrise (early in May). This is the beginning of the hot season.

IV,49: The star: According to al-Anṣārī (see above IV,47), the term "*an-naǧm*" (= star) is used generally for every star, but in particular for the Pleiades. A marginal note in AL-ḪAṬĪB AL-BAĠDĀDĪ's *R. fīᶜilm an-nuǧūm* (fol. 3r) explains it as the Pleiades; and so does AṬ-ṬABARĀNĪ in *al-Muᶜǧam aṣ-ṣaġīr* I,41.

IV,50: Cf. Sūra 44,9. — In the background is here probably some theory like that of the Pythagorean philosopher Philolaos that the final destruction of the world may come about through a fire from heaven (cf. H. DAIBER: *Aetius Arabus* 142f., II, 5,3). — Note that the editor of AL-ḤĀKIM's *al-Mustadrak* reads *"ad-daǧǧāl"* (IV, 459).

V,0: Note that this chapter says nothing about "the hours", inspite of its heading.

V,1: Concerning the two angels see above IV,28. — The pearls are probably identical with the crystal that in ancient Persia was suspended in front of the royal tents as symbol of the Sun (see J. REINER: *Zarathustra* 116). Or perhaps they were part of that crown which according to *The Book of the Secrets of Enoch* (p. 16 f.) is given to the Sun every morning at sunrise and taken away when it sets. But in that case 400 angels are involved.

V,2: Apparently a counsel against too much speculation. See AL-ḤĀKIM: *al-Mustadrak* I, 36.

V,3: Sūra 21,30. — Cf. above III,24 and III,9. The priority of the night over the day is significant because the day as a calendar unit begins at sunset (see F.K. GINZEL: *Handbuch der mathematischen und technischen Chronologie* I, 256).

(= Canopus) was kicked far into the southern sky where it is now (see M. HÖFNER: *Die Stammesgruppen Nord- und Zentralarabiens in vorislamischer Zeit;* in: *Wörterbuch der Mythologie* I, 469, "Sternsagen". Also: J. HENNINGER: *"Über Sternkunde und Sternkult in Nord- und Zentralarabien"* 89 ff.). G. Abū l-Farāǧ BAR-HEBRAEUS relates a similar Arabic story about Canopus in the *Livre de l'Ascension de l'Esprit sur la Forme du Ciel et de la Terre* (written in 1279; transl. by F. Nau, p. 104). But there Canopus is not kicked, he has to flee after having broken the back of his bride Orion.

The idea that the stars were divided into troops, each under its own leader, comes originally from Persia. But rebellious stars are also known from the Ethiopic Enoch: "And the stars which roll over the fire are they which have transgressed the commandment of the Lord in the beginning of their rising, because they did not come forth at their appointed times." (See: *The Book of Enoch, or 1 Enoch* 42, 44 and 80, note 5).

IV,42: The idea of transformation seems to have been fairly common in early Arabic literature: Cf. M. ADAD: *Le Kitāb at-Tarbīᶜ* 318 (100), nr. 206. See also: *EI*[1] IV, 527 (art. by SCHOY).

IV,45: The Ms. Köprülü 138 of ABŪ Š-ŠAYḪ's *K. al-ᶜaẓama* actually has the reading *"al-islām"*. The reading *"al-īlām"* (= "pain") is perhaps the product of rationalization. It is noteworthy that Canopus was somewhat of a novelty for the Greeks as well: It was one of the stars named "only yesterday or the day before yesterday" (F. BOLL: *Sphaera* 174). The reason for this is probably its rare visibility in Greece. That Canopus in this text is said to rise in "Islām" cannot be meant in a temporal sense, rather as implying that it was brought into submission by transformation.

IV,47: Sūra 113,4. — The term *"al-ġāsiq"* is another stimulus of cosmological thinking. In AL-ḪAṬĪB AL-BAĠDĀDĪ's *R. fī ᶜilm an-nuǧūm* it is connected with the Moon (fol 7 v): It is called *"ġāsiq"* because of its eclipses. But it is explained that the Prophet sought refuge from the corresponding evil because under the cover of darkness evil-doers can commit more sins. To fear an evil from the eclipse was apparently considered a deviation from monotheism.

The explanation offered in IV,47 for *"al-ġāsiq"* may be an application of an old weather maxim based on the *anwā'* (C. PELLAT: *"Dictons Rimés, Anwā' et Mansions Lunaires chez les Arabes"*, especially pp. 20 f.). But it is at least unusual that the term *"al-ġāsiq"* should stand for the invisibility of the Pleiades due to the proximity of the Sun. An

stars, however, are suspended on the sky as the lamps in mosques are suspended. They turn with the sky in a rotation of praise and recitation of the "holy", "holy". (Ms. Köprülü 138; fol. 58 r.)

Then follows an instruction by the Prophet himself how these planetary movements can be verified in relation to the turning sky or the Milky Way.

Ibn Qutayba devotes a chapter of his *K. al-anwā'* to the stars called *al-ḫunnas* (pp. 126-128). He lists them with their common names, although he also mentions the names used in Abū š-Šayḫ's text, and he arranges them in the following order:

Saturn — Jupiter — Mars — Mercury — Venus.

In this work, and more concisely in his *Tafsīr ġarīb al-Qur'ān* (p. 517), he derives the word *al-ḫunnas* from the observation of the retrograde motions of the planets and the word *al-kunnas* from their disappearance: Like gazelles they go to their hiding-places *(al-kinās)*.

Al-Ḫaṭīb al-Baġdādī, in his *R. fī ʿilm an-nuǧūm*, describes these stars differently. He includes Sun and Moon and orders them as follows: Saturn — Bahrām (= Mars) — Mercury — Jupiter — Venus — Sun — Moon.

On the basis of one tradition he says that they are *ḫunnas* by day and visible by night, thus seemingly interpreting *ḫunnas* as "hiding". But another tradition tells him that *ḫunnas* refers to the retrograde motion of the planets and *kunnas* to their disappearing (fol. 3 r.). — Cf. an-Nuwayrī: *Nihāyat al-arab* I, 38 ff. All these texts, obviously, contain very little information about the planets; but they do show that the Qur'ān, not the will of a political potentate, aroused the early Muslims' curiosity in the planets.

IV,41: Canopus and the command: According to Abū l-Qāsim ʿĪsā b. ʿAlī, some among the planets and the fixed stars are like troops and soldiers under the Sultan (or: the fixed stars are thus grouped under the planets: see Ibn Qayyim al-Ǧauzīya: *Miftāḥ dār as-saʿāda* II, 151). We already encountered instances of leadership among the celestial bodies: Cf. above III,4 (the eight leading stars in *The Book of the Secrets of Enoch*), above IV,28 (the two in charge of the Sun) and above IV,33 (one angel — Uriel, the leader).

It is interesting that according to the Mandaean Scriptures the southern half of the world was made by Michael (the northern by Gabriel; cf. K. Rudolph: *Theogonie, Kosmogonie und Anthropogonie* 200, note 5): Is the story of Canopus connected with the war between Michael and Lucifer? — Further, Lucifer fell from heaven (Lk. 10,18), while Suhayl

237 ff.). The height of 80 farsaḫs (= 453.6 km, if 1 farsaḫ = 5.67 km) is, of course, above any earthly measure. But even as late as the 13th century the well-known scholar Quṭb ad-Dīn aš-Šīrāzī greatly over-estimated the height of the highest mountain: 2 1/3 farsaḫ (= 13.23 km, if 1 f. = 5.67 km); see E. WIEDEMANN: *"Über die Gestalt, Lage und Bewegung der Erde sowie philosophisch-astronomische Betrachtungen von Quṭb Al Dīn Al Schīrāzī"* 399. Al-Qazwīnī mentions even higher figures: *20, 100 and 1000 farsaḫs* (see *K. ᶜAǧā'ib al-maḫlūqāt* I, 151). Concerning this mountain see also A.J. WENSINCK: *"The Ideas of the Western Semites"*.

IV,38: Rabbi Eliezer records the rivalry between Sun and Moon in full, but omits the theory of the lunar phases which, according to B.L. VAN DER WAERDEN (*Die Anfänge der Astronomie* 230), is of Babylonian origin. Cf. also: P. SCHNABEL: *Berossos* 257 ff.; and: S. TOULMIN: *"The Astrophysics of Berossos the Chaldean"* 65-76. — The story begins at creation:

> On the fourth day He connected together the two luminaries, of which one was not greater (in size) than the other. They were equal as regards their height, qualities, and illuminating powers, ...Rivalry ensued between them, one said to the other, I am bigger than thou art. The other rejoined, I am bigger than thou art. — What did the Holy One, blessed be He, do, so that there should be peace between them? He made the one larger and the other smaller... (*Pirḳê de Rabbi Eliezer* 31. — Cf. also: *Midrash Kōnen;* in: A. WÜNSCHE: *Aus Israels Lehrhallen* III, 175 f.).

IV,39: Sūra 36,39. — This brief text is a historically important testimony that the Muslims at a very early time were acquainted with the lunar stations (cf. M. ULLMANN: *Die Natur- und Geheimwissenschaften im Islam* 351).

IV,40: Sūra 81,15. — This mysterious text dating from a very early time caused the Qur'ān commentators to collect all the available information about the planets. A passage in ABŪ Š-ŠAYḪ's *Kitāb al-ᶜaẓama*, which as-Suyūṭī did not quote in his compilation — probably for formal reasons —, contains the names of the five planets concerned. These names, and the order in which they are enumerated, indicate their age. The text is based on the authority of Ibn ᶜAbbās and ᶜAlī b. Abī Ṭālib. I extract the central part:

> These are five stars: Al-Barǧays (= Jupiter), az-Zuḥal (= Saturn), ᶜUṭārid (= Mercury), Bahrām (= Mars) and Az-Zuhara (= Venus). These five stars wander and rove like the Sun and the Moon in a circular orbit, moving along with them. All the other

IV,33: Cf. above IV,29 and 28. — One angel: In the Ethiopic Enoch, too, only one angel (Uriel) is the leader of the celestial bodies (*The Book of Enoch, or 1 Enoch* 151).

IV,34: This explanation of eclipses seems to be unique. It is noteworthy that al-Ḫaṭīb al-Baġdādī insists that God with His power brings about the eclipses through the motions of Sun and Moon, although he knows that they occur at their conjunctions and oppositions (*R. fī ʿilm an-nuǧūm* fol. 7 r.).

I do not know which Ibn al-Buḫārī is meant here (reg. the name cf. F. ROSENTHAL: *A History* 349 n. 2 and *GAL* I, 366), but the statement is not found in *at-Ta'rīḫ al-kabīr* or *at-Ta'rīḫ aṣ-ṣaġīr* of the well-known Muḥaddiṯ AL-BUḪĀRĪ.

IV,35: 3 farsaḫ = 3 × 5.67 km = 17.01 km. Note that this sea is located below the sky (cf. IV,20). Sūra 21,33. — Of special interest is that "*al-falak*" here clearly means "revolution" and not "sphere"; the latter translation probably came up under the influence of Greek astronomy (cf. IBN QUTAYBA: *Kitābu 'l-Anwā'* 124).

This curious explanation of solar eclipses is remotely reminiscent of Anaximander's. In his view they are "caused by temporary stoppages of the apertures in the rings", in the case of the Sun the hole in the rim of its wheel (see J.L.E. DREYER: *A History of Astronomy* 15; from AETIUS II,24, 28, 29; DIELS, 354-59). The lifting of the Sun at sunset seems to correspond to its yearly motion: According to AN-NUWAYRĪ's *Nihāyat al-arab* I, 41.3 it has its place in the seventh heaven in winter, while it is in the fifth heaven in summer. Cf. also Empedocles' view that the course of the Sun is the outer limit of the world (H. DAIBER: *Aetius Arabus* 138 f., II, 1,4. — cf. above IV,28). The veil of darkness probably corresponds to the lowest heaven called *vīlūn* in Talmudic teachings (see above III,0): "According to some, it appears in the morning and disappears in the evening... according to Berachoth 58b the Wîlôn is rolled up in order that the light of the second heaven, the Rakîa, may be seen." (*The Book of the Secrets of Enoch* 5, note VI,1; p. 63 ff.: The Sun has 7 circles).

IV,36: That the Sun sets with a sound is not an unusual assertion (cf. R. EISLER: *Weltenmantel und Himmelszelt* II, 487, + note 1). But that night and day are believed to do the same is rather curious. The Babylonian practice of linking sounds with meteorological phenomena is an illuminating parallel (cf. F.X. KUGLER: *Sternkunde* II, 1. Teil: 91).

IV,37: This mountain is probably identical with the Babylonian "mountain of the East" (see P. JENSEN: *Die Kosmologie der Babylonier*

of the chamber cometh the storm and cold out of the scattering winds" (ibid. XXXVII, 9). — Through these apertures which are in the east (the sun) // goes forth and opposite to them in the west (the sun) sets. (*Pirkê de Rabbi Eliezer* 37 ff.).

This is obviously the same system as in the Arabic texts; it is also alluded to in *The Book of the Secrets of Enoch* (p. 15) and in *The Book of Enoch, or 1 Enoch* (p. 151). But the numbers indicate that the Arabic texts preserve the older, more primitive version. For an astronomical interpretation of this system see O. NEUGEBAUER: *"Notes on Ethiopic Astronomy"*. This method of keeping track of the Sun is perhaps of Egyptian origin (cf. E. WIEDEMANN: *Aufsätze zur arabischen Wissenschaftsgeschichte* I, 139; according to al-Qazwīnī, the Egyptian temple of Dendera had 180 such windows; see *K. ʿAǧāʾib al-maḫlūqāt* II, 130).

IV,31: Sūra 70,40; cf. Sūra 26,28 and 37,51. — Note the plurals Easts and Wests. This is a clear instance of the Qur'ānic text providing the occasion for reflection on natural phenomena and the adoption of scientific elements. They seem to agree with those discussed in the previous section, the variances attributable to misunderstanding. Or does the text allude to some other time-keeping device, e.g. towers arranged to show the date? But it is difficult to see how so many could show a difference.

IV,32; This text clearly refers to the signs of the Zodiac. The distance of one barley-corn between two steps is particularly interesting. This would be as little as 0.00275 m; hence the 30 risings of every tower would amount to 0.0825 m, together for all 12 towers 0.99 m. All this is based on the relationship:

72 barley-corns = 1 uš = 2/5 cubits;
1 cubit = 180 barley-corns;
1 cubit = 0.495 m (19 1/2 ins.).

(The first two correlations are taken from O. NEUGEBAUER: *A History of Ancient Mathematical Astronomy* Part 1, 514, note 1; and the third from L. DELAPORTE: *Mesopotamia* 224). — If the correlations of later Muslim scientists are adopted, a barley-corn is slightly bigger: 0.0034635 m (or 0.00375 m), depending on the value of the cubit (0.49875 m or 0.5404 m). For instance, in AŠ-ŠĪRĀZĪ's *Nihāyat al-idrāk* the correlation is: 1 cubit = 24 fingers; and: 1 finger = 6 barley-corns. (Cf. E. WIEDEMANN: *"Über die Dimensionen der Erde nach muslimischen Gelehrten"* 251. — Further: W. HINZ: *Islamische Masse und Gewichte* 54).

towards the throne indicate that this journey takes at least a year, or a cycle of years. For they make no sense as subdivisions of a day. Normally the word *burğ* denotes a sign of the Zodiac; but this passage seems to speak of a division of the ecliptic into 360 parts, unless it refers to a cycle. If so, and if *burğ* has the usual meaning, it would take the Sun 30 years to reach the throne. Finally, the view that the Sun soars higher than all the other stars is not unusual at all. It was already held by the Greek philosophers Anaximander and Leucippos (see: H. DIELS: *Die Fragmente der Vorsokratiker* 12 A 11; 67 A 1), as well as by the ancient Indians (see: W. KIRFEL: *Die Kosmographie der Inder* 23). The Armenian cosmograph Ananiya Shirakazi adopted it, too, but placed the seven leading stars (cf. above III,4: eight stars!) still higher (W. PETRI: *"Ananija Schirakazi"* 275). — Interestingly *The Book of the Secrets of Enoch* (p. 63 ff.) speaks of 364 thrones.

IV,29: Cf. *The Book of the Secrets of Enoch* (p. 12): "Fifteen myriads of angels go out with the sun and attend him during the day, and by night one thousand." — The two angels: Cf. the two stars which carry the Sun (W. PETRI: *"Ananija Schirakazi"* 276). — The cooling water: See above IV,27. Apparently this cooling produces the sound one might hear.

IV,30: Rabbi Eliezer provides a fuller description of this kind of solar observation in the course of the year; he writes:

> In 366 (degrees) the sun rises and declines, it rises 183 (degrees)// in the east, and it declines 183 (degress) in the west corresponding to the 365 days of the solar year. (The sun) goes forth through 366 apertures and enters by the east; 90 days it is in the south (east) quarter, 91 days in the north (east) quarter and one aperture is in the middle and its name is Nogah. — (At) the Teḳuphah of Tishri (the sun) begins from the aperture of Nogah and goes through its revolutions towards the south quarter, through one aperture after another until it reaches the aperture of Bilgah. (At) the Teḳuphah of Ṭebeth (the sun) begins from the aperture of Bilgah and continues its course, returning backward through one aperture after another until it reaches the aperture of Taᶜalumah, through which the light goes forth, as it is said, "And the thing that is hid bringeth he forth to light" (Job XXVIII, 11). (At) the Teḳuphah of Nisan (the sun) begins from the aperture of Taᶜalumah, and it goes to the north quarter through one aperture after another until it reaches the aperture Noᶜaman. (At) the Teḳuphah of Tammuẓ (the sun) begins from the aperture Noᶜaman and goes on its course, returning backwards through aperture after aperture until it reaches the aperture Cheder whence the whirlwind goes forth, as it is said, "Out

Philoponos to the scholastics at the university of Paris (see: M. CLAGETT: *The Science of Mechanics in the Middle Ages* 505-525; and E. GRANT: *A Source Book in Medieval Science* 275 ff.).

IV,27: The idea that the Sun must be prevented from setting everything afire is also known from other authors. In Cosmas Indicopleustes' view that is why there is water in heaven (see: W. WOLSKA: *La Topographie Chrétienne* 175). Rabbi Eliezer says that "the sun's rays and face, which are turned downwards (to the earth), are of hail; and were it not for the hail which quenches the flames of fire the world would be consumed by fire..." (*Pirḳê de Rabbi Eliezer* 40). *The Book of the Secrets of Enoch* seems to say the opposite: "And a hundred angels keep warm and light up the sun" (p. 12; but other angels guard the treasuries of the snow and ice: p. 5).

IV,28: Cf. above IV,25. The two angels (?) in charge of the Sun are perhaps identical with the two planets closest to it, and the two angels standing in the East or the West respectively may also be stars rising or setting just at this time (the paranatellonta?). Cf. the two stars carrying the Sun: W. PETRI: "*Ananija Schirakazi*" 276. — And: D. PINGREE: "*Astronomy and Astrology in India and Iran*" 242.

Rabbi Eliezer also knows of the adoration of the Sun: "The Shekhinah is always in the west. (The sun) sets and worships before the King of Kings, the Holy One, blessed be He, saying: Lord of all worlds! I have done according to all that Thou hast commanded me." (p. 39)

He also hints at the identity of what is called the pole of the Sun; he says: "The aperture which is in the midst of the firmament is named M'ẓarim and (the sun) does not go forth or set therein except once in its great cycle; (thereon) it goes through it as on the day when it was created." (*Pirḳê de Rabbi Eliezer* 39). — Note 8 explains that this great cycle extended over 28 years. Thus we can conjecture that the 28 steps of 500 'years' each (see above III,2) refer to the cycle of 28 years. In this period the Sun would cover its whole course, before being sent out again. Perhaps the 28 years were simply multiplied by 1000 to prolong the life of the world in one cycle.

According to LANE's *Lexicon* (I, 220), *buṭnānu al-ʿarš* means: "The lower, or lowest, part, or the foundation of the *ʿarsh* (vulgarly held to be the throne of God)". The Arabic text seems to say that the Sun goes up that far, hence it is not limited to one heaven, but traverses all. This it does apparently every day. Is the throne, therefore, always in the west? — However, the 360 towers in which it can rest before proceeding

Biruni and Ibn Sina, al-As'ila wa 'l-Ajwibah (Questions and Answers), question 7, p. 30). The priority of East or West is important in the early geographical writings as determining where to start counting the longitudes (cf. E. HONIGMANN: *Die sieben Klimata* 155). The priority of South over North is expressed in the division of the seven *climata:* The first is always the southernmost. But the distinction of the directions is charged with religious fervour because the localization of the deities depended on it. Thus the Sabians are said to have directed their prayers towards the North-pole (see D. CHWOLSON: *Die Ssabier und der Ssabismus* II, 5, + extensive note 29 on pp. 59 ff.); and the Mandeans consider it as the localization of the world of light (cf. K. RUDOLPH: *Theogonie, Kosmogonie und Anthropogonie in den mandaeischen Schriften* 200, n. 5). In his *K. ᶜAǧā'ib al-maḫlūqāt* (pp. 30 and 40) AL-QAZWĪNĪ even speaks of special powers of both poles. Discussions on the priority of directions are also preserved in the *Placita Philosophorum* (H. DAIBER; *Aetius Arabus* 146 f., II, 10.

For the text cf. AL-BUḪĀRĪ: *at-Ta'rīḫ al-kabīr* IV², 341, nr. 3245.

IV,23: A sea under the throne: This is clearly not a geographical, but a celestial ocean (cf. Sūra 52,5 and I,11 of the present treatise).

IV,24: Cf. above IV,21. Here the "Rise where you set!" must refer to the Day of Resurrection, when the Sun is supposed to rise in the West.

IV,25: In *The Book of the Secrets of Enoch* (p. 5) only 200 angels are said to rule the stars. The number 360 here is probably determined by the division of the ecliptic into 360 degrees. One wonders whether the pictures supposedly assigned to these degrees by the Babylonians did not become angels (cf. D. CHWOLSON: *Über die Überreste* 462. Some of these pictures are enumerated in M. ULLMANN: *Die Natur- und Geheimwissenschaften im Islam* 294 f.). — In antiquity as well as in the Middle Ages it was a common view in traditional circles that the angels were charged with moving the Sun and the other celestial bodies (see the interesting opposition of Cosmas and Philoponos' ideas in W. WOLSKA: *La Topographie Chrétienne* 168. — And the essay of H.A. WOLFSON: *"The Problem of the Souls of the Spheres"* 67-93). — Cf. also the 360 *ᶜurwas* and the angels, in: AN-NUWAYRĪ's *Nihāyat al-arab* I, 41.

IV,26: This remarkable mechanistic explanation of the Sun's motion is discussed in the historical analysis (p. 103). Its particular interest stems from its resemblance to the famous and productive theory of impetus which occupied the minds of scholars from Hipparchos or John

IV,18: Sūra 36,40 and Sūra 21,33. — Since a mere change of vocalization from *falak* to *fulk* involves one in meaning from "sphere" to "boat", an obvious play on words is intended. But the early commentators stress the sphericity (cf. SUFYĀN AṮ-ṮAURĪ: *Tafsīr al-Qur'ān al-kabīr* 189). It is interesting that the image of the Sun and the stars as ships was also made current through the *Placita Philosophorum* (cf. H. DAIBER: *Aetius Arabus* 158 f. and 162 f., II, 22.2 and II,28.6. But it must have predated Greek influence: See I. LICHTENSTADTER: "*Origin and Interpretation of some Qur'ānic Symbols*" 58-80, esp. 70 ff.). The image of the *abwāb as-samā'* (= "the doors", or probably the "hinges", "of heaven") is also intriguing. Obviously the poles, or the axis, of the universe are meant.

IV,19: This text is intriguing insofar as *Qibla* can hardly be understood as the direction towards the Kaᶜba as religious center. *Qibla* must have an astronomical-geographical meaning. Perhaps it can be taken as a parallel to the Babylonian *Ḳabal šamī*, which according to P. JENSEN means "Mitte des Himmels", d.i. "Meridian" (*Die Kosmologie der Babylonier* 16). — Interestingly enough, D. King found such an astronomical definition of the *Qibla* in Egypt: "... in early Muslim Egypt the rising point of *al-jady* = Capricorn, that is, the azimuth of the rising sun at the winter solstice, was also used to define the qibla ... This direction was later favored as the *qiblat al-ṣaḥāba*, that is, the qibla of the Companions of the Prophet Muḥammad who first occupied Egypt, and hence many medieval mosques in Cairo face this direction." (in: Review on E.S. KENNEDY, *A Commentary upon Bīrūnī's Kitāb Taḥdīd al-Amākin* 321). — According to A.J. Wensinck, the Kaᶜba was believed to be exactly opposite the center of heaven (Polestar) (see: "*The Ideas of the Western Semites*" 47). The religious implications for the choice and change of the *Qibla* in Qur'ānic times cannot be developed here.

IV,20: IV,2 — Note especially that the sphere of the Sun, the Moon, and the stars resolves between the sky and the earth. *Samā'* (i.e. "the sky"), therefore, is not the equivalent of "sphere", e.g. of a planet.

IV,21: This is commonly interpreted as a foreboding of the Day of Resurrection. But the theological implication that the directions depend on the Creator's will, not on the Sun or a natural order, was not forgotten. It is amazing how eagerly the question was discussed which geographical direction was right and which one left (even by people like al-Bīrūnī and Ibn Sīnā; see e.g. Nasr, S.M. and Mohaghegh, M.: *Al-*

grandeur du soleil est comme celle du monde, plus un tiers, et celle de la lune celle du monde exactement. (C. HUART: *le Livre de la Création* II, 17).

But even if we do not know what to do with these figures, C.A. Nallino's negative assessment does not seem to be justified. They do testify to a real interest in ascertaining the dimensions of Sun, Moon, and stars on the part of the early Muslims (which Nallino apparently denies — see: *Raccolta* V, 195-197; *ᶜIlm al-falak* 137-140).

These particular figures do not occur among those of ancient authors discussed by O. NEUGEBAUER in his book *A History of Ancient Mathematical Astronomy* (esp. Part 2, 662 ff.). But his remarks concerning Eratosthenes' statement that the "measure of the sun" should be the 27-fold of the "measure of the earth" (on p. 663) may have some relevance for Ibn ᶜAbbās' figure of 900 farsaḫs, a multiple of three (and: 18 × 500 = 9,000). In any case, qualitatively the figures of the early Muslims are on the same level as those of many ancient authors (cf. above III,2).

IV,14: 80 farsaḫs are equivalent to 453.6 km, if one is 5.67 km. It is curious that the height of the mountain behind which the Sun rises is also 80 farsaḫs (cf. IV,37). This possibly indicates that the measure of the Sun was executed with the help of a waterclock (see: L.A. SÉDILLOT: *Mémoire sur les Instruments Astronomiques des Arabes* 16. — Further: O.NEUGEBAUER: *A History of Ancient Mathematical Astronomy* Part 2, 664), and perhaps it explains its crude inaccuracy (cf. p. 657 f. of the last mentioned book).

IV,15: See above IV,13. — O. Neugebauer quotes an anonymous author and John of Damascus according to whom "the teachers of our Church", or "the Holy Fathers", as stated by the latter, held that Sun and earth are of the same size (*A History of Ancient Mathematical Astronomy* 663).

IV,17: Probably *as-sāqīya* can here be interpreted as "water wheel". Thus the text is a parallel to IV,35. The comparison with the water wheel is significant for the discussion of relative motion in later astronomy (see e.g. the example of the mill in QUṬB AD-DĪN AŠ-ŠĪRĀZĪ's *Nihāyat al-idrāk fī dirāyat al-aflāk;* the relevant passage is translated in E. WIEDEMANN's "*Über die Gestalt, Lage und Bewegung der Erde sowie philosophisch-astronomische Betrachtungen von Quṭb Al- Dīn Al Schîrâzî*" 416 f. — In Abū š-ŠAYḪ's *Kitāb al-ᶜaẓama*, too, the *falak* of Sun and Moon is compared with a mill (*ar-raḥā*): fol. 78 v.).

répondit: "Il y a quatre espèces de feux, un qui mange et qui boit, c'est votre feu ordinaire; un feu qui ne boit ni ne mange, c'est celui qui est latent dans la pierre; un feu qui boit et ne mange pas, c'est celui qui est latent dans le bois; un feu qui mange et ne boit pas, c'est celui de l'enfer, qui mange la chair des damnés et ne boit pas leur sang; c'est comme cela que leurs âmes peuvent subsister." (C. HUART: *Le Livre de la Création* I, 183 f.).

According to J. VAN ESS this discussion took a more philosophical turn in the school of an-Naẓẓām (see his article *Ḍirār b. ᶜAmr und die "Cahmīya"*, especially pp. 241-256). Unfortunately he does not consider the traditional materials at all, otherwise their impact on later natural philosophy would surely emerge. — Cf. also: B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 27.

IV,8: Cf. AN-NUWAYRĪ: *Nihāyat al-arab* I, 40.18.

IV,9: Sūra 71,16.

IV,10: Cf. B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 230.

IV,11: This could be an allusion to the number of stars. Actually, John Flamsteed, in his catalogue of stars of the year 1725, described some 3,000 stars (cf. C.A.NALLINO: *Raccolta* V, 177: *ᶜIlm al-Falak* 114). *The Book of the Secrets of Enoch* (p. 12) counts as many as 8,000 stars. — The estimate of stars varied a good deal (see: E. WIEDEMANN: *Aufsätze zur arabischen Wissenschaftsgeschichte* I, 82, Anm. 1: Estimated: 5,500; Argelander: 3,256; Heis: 5,421).

IV,12: Cf. *Pirḳê de Rabbi Eliezer* 40: "The sun has three letters of (God's) Name written upon his heart..."

IV,13: Unfortunately the brevity of the text precludes any definite conclusion concerning the method by which these figures were found. If one farsaḫ is 5.67 km, their equivalent would be 5,103 km and 68.04 km respectively. But — are they diameters or areas? A remark of al-Maqdisī shows that from the beginning their true value was disputed. He writes:

> Abou-Hodhaïfa rapporte, d'après ᶜAṭâ, que celui-ci aurait dit: Il m'est parvenu qu'il (le prophète?) aurait dit que la longueur et la largeur du soleil et de la lune sont chacune de neuf cents parasanges; et eḍ-Ḍaḥḥâk ajoute: Nous fîmes le calcul, qui donna pour résultat neuf mille parasanges, (et cependant) le soleil est plus grand que la lune. Le même ajoute: La grandeur des étoiles est de douze parasanges au carré. On nous rapporte d'Ikrima qu'il aurait dit: La

IV,3: Sūra 6,97.

IV,4: Sūra 37,6.7; cf. Sūra 72,9 and above III,8.

IV,5; It is impossible to say which came first; but this statement agrees well with the identification of *al-aṯīr* (= ether) with *falak al-ᶜarš* (= the sphere of the throne) (LANE's *Lexicon* I, 19).

IV,6: Sūra 71,16; cf. Sūra 20,6. — This curious explanation of the origins of Sun and Moon hinges on the identity of that *al-aṯrā* which provides the fire and the light respectively. At first sight one is tempted to read the word as *al-aṯīr* (= the ether). But the testimony of the manuscripts excludes this reading. In his *Lexicon*, LANE mentions under the form *tharā* (meaning "moisture", "humidity"; and "moist earth") also the forms *al-tharā* and *athrā* as signifying "the earth", the latter being used as a proper name (I, 19).

As mentioned above in III,44, aṯ-Ṯaᶜlabī reserves this name for the seventh earth. Strange as it may seem, this correlation with the seventh earth brings some consistency into these mysterious texts. The very next fragment (IV,7) states that the Sun and the devils are created from the same kind of fire. And several fragments in the preceding chapter assign the seventh earth to the devil (e.g. III,32.33) or make it the place of hell (III,36). Thus al-Maqdisī writes:

> Certaines personnes ont prétendu que l'enfer est déjà créé et se trouve au-dessous des limites des terres inférieures; les mers le sépareraient des créatures; elles disent aussi que la chaleur du soleil et la température torride de l'été en sont le dernier reflet... (C. HUART: *Le Livre de la Création* I, 183).

But in Greek literature, too, similar ideas are found about fire that comes out of the earth, apparently due to observations of volcanos (cf. O. GILBERT: *Die Meteorologischen Theorien des Griechischen Altertums* 699 and 688 f.).

IV,7: Al-Maqdisī gives a different commentary on the four kinds of fire, one that shows us in which context this question may have been discussed:

> Certains individus ont trouvé singulier qu'un être animé puisse subsister dans l'enfer, mais c'est à cause de leur science insuffisante, car il y a plusieurs espèces de feu, telles que l'éther qu'on prétend exister dans les parties les plus hautes de l'atmosphère, le feu existant à l'état latent dans les pierres et le bois. On demanda à Ibn-ᶜAbbās quelles traditions se rapportaient à cette question. Il

to stand, is in Ṯaᶜlabī's text the name for the seventh earth (T. FAHD: "*La Naissance Du Monde Selon L'Islam*" 254, n.).

III,45: Sūra 31,16.

III,46: See ṬABARĪ: *Ǧāmiᶜ al-bayān* XXI, 72.

III,47: Sūra 70,4. — 50,000 years: This probably is just the highest imaginable number, although it could be interpreted as the sum of the 28 steps of 500 years (e.g. in III,2) and the 36,000 years up to the throne (see I,35).

III,48: That the Gog and Magog live in six regions conflicts with the common division of the earth into seven *climata;* there they only occupy the seventh, or the northern parts from the fifth upward (E. HONIGMANN: *Die sieben Klimata* 178 and 149 ff.). In this context the emphasis is clearly on the biblical notion of their immense numbers (cf. Ezechiel 38,1 ff.; and M. ADAD: *Le Kitāb al-tarbīᶜ wa-l-tadwīr d'al-Ǧāḥiẓ* 286 (19) + note 5). But there could be another explanation: According to Severus Sebokht the ancients divided the terrestrial globe into five zones, and the corresponding 180° from North- to South-Pole into 30 parts of 6° each. The five zones could then be conveniently measured as follows:

$$6 + 5 + 4 + 4 + 5 + 6 = 30 \text{ parts} = 180^{\circ}.$$

Since the Gog and Magog are usually said to inhabit the northernmost regions of the earth, they probably were assigned the six parts of the northernmost zone. Hence our text would be confusing this old division of the globe with the seven *climata* (see F. NAU "*Le traité sur les 'constellations'* " 93.

III,49: See G. VITESTAM: *K. ar-Radd* 24.

IV,1: Sūra 71,16.

IV,2: Sūra 14,33 — He subjected: Interestingly a modern book on the Sun discusses this idea in connection with the question whether the Sun is a variable star:

> The sun... was supposed originally to have been very erratic. Sometimes he hurried too fast on his journey; at other times he dawdled. On occasion he came too close to the earth; often he was too far away. Sometimes he failed to appear at all. Finally, with great difficulties, the sun was caught in a trap or a net, beaten into submission, and, thereafter, performed his duties with absolute regularity. (D.H. MENZEL: *Our Sun* 5).

Wind" of the Akkadian creation epic *Enūma eliš (The Ancient Near East;* ed. by J.B. PRITCHARD 32 ff.).

III,34: Cf. Sūra 83,7.

III,35: See AL-ḤĀKIM: *al-Mustadrak* IV, 594.

III,36: For the distance of 500 'years': See above III,2 and the discussion in the historical analysis (p. 88). It is interesting that only the uppermost earth rests on a fish. This fish most probably is identical with the Syriac dragon or serpent *Ataliā* (cf. above II,2). — Cf. AL-ḤĀKIM: *al-Mustadrak* IV, 594.

III,38: Cf. above III,36.

III,39: Cf. Sūra 18,63. — Its horns are suspended at the throne: Either emphasizing the semi-globular shape of the universe, or "explaining" why no rain — and with it seeds — is poured down by it.

III,40: Sūra 31,16.

III,41: The rock: Cf. Job 38,6; and *The Book of Enoch, or 1 Enoch* 39: "And I saw the cornerstone of the earth."

III,42: The chain in the ear of the fish: The chain (with definite article) could be the link between the uppermost and the lowest part of the universe (cf. above III,8 about the descent of revelation). Or the chain may be a safeguard against uncontrolled movements of the fish resulting in earthquakes (cf. above III,8). T. Fahd describes another such safeguard:

> Cette superstructure géante tient à un simple mouvement de la Baleine. Une légende a prévu le mal et trouva le remède. Iblis — le diable —, nous dit-elle, se faufila jusqu'à la Baleine et lui suggéra de secouer sa lourde charge et de s'en débarrasser. La Baleine conçut de le faire; mais, Dieu lui envoya sur-le-champ une petite bête qui lui entra dans une narine et pénétra jusqu'au cerveau. Le grand poisson gémit (et implora) Dieu, qui permit à la petite bête de sortir. Mais, elle se tient face à la Baleine, menaçant de rentrer, chaque fois que cette dernière est tentée de se mouvoir. (Note 72: ... une punaise qui lui entra dans l'oeil et l'occupa). (T. FAHD: *"La Naissance Du Monde Selon L'Islam"* 253).

III,44: Sūra 31,16. — According to T. FAHD (*"La Naissance Du Monde Selon L'Islam"* 253), this bull is sometimes called *ar-Rayyān*. But in his text this bull stands on a whale. The *Ṯarā,* on which it here is said

III,23: Cf. Job 38,6; and *The Book of Enoch, or 1 Enoch* 39: "And I saw the corner-stone of the earth." — Concerning the colour, cf. III,16 of the present treatise.

III,24: Sūra 51,7. — Like the garment: Cf. the following text of the astrologer MICHAEL SCOTUS (Cod. lat. Monac. 10268 f. 77 v., col. 1):

> De notitia ordinum stellarum fixarum. Phylosophi quondam multis experimentis noverunt celum esse stellatum ordinabiliter tam desubter quam super, unde ex tali ordinatione stellarum est preciosius et videtur esse pulcerimum. cuius exemplum trahimus de ueste alicuius bene frisata et gemmis preciosis adornata in suo contestu; et quamquam celi stelle videantur seminate seu asperse, melius sunt disposite in eodem quam videantur uel credantur ab ydiotis que sic morantes nobis designant tanquam puncti vel termini lapidum preciosorum signa coeli 12 et imagines 48 etc. (quoted in R. EISLER: *Weltenmantel und Himmelszelt* I, 4 note 2).

Virtually the whole first volume of Eisler's book is devoted to the comparison between heaven and garment.

According to the *Placita Philosophorum* also Leucipp and Democrit spoke of the world as having a garment (H. DAIBER: *Aetius Arabus* 144 f., II, 7,2). IBN QUTAYBA has a different explanation of *al-ḥubuk:* "The tracks" for him are like the ripples caused by the wind on water or on sand (*Tafsīr ġarīb al-Qur'ān* 420). — Cf. III,9.

III,25: Firmly joined together through the stars: Cf. the view of Anaximenes that the stars are like nails (H. DAIBER: *Aetius Arabus* 150 f., II, 14,3).

III,27: Again Sūra 51,7.

III,28: The new name for the seventh heaven could simply be an attribute, e.g. "pure", "unmixed" (= *ṣurāḥ*). However, A.J. Wensinck refers to Wahb b. Munabbih and interpretes *aḍ-ḍurāḥ* as meaning "the visited House" ("*The Ideas of the Western Semites*" 48).

III,29: G. VITESTAM: *K. ar-Radd* 12. — Cf. above III,8.

III,31: Sūra 41,11. — Cf. Anaximenes' position that the substance of heaven is steam (H. DAIBER: *Aetius Arabus* 146 f., II,11,1).

III,32: Again, a useful synopsis of the names of the seven earths and their contents is furnished by T. FAHD: "*La Naissance Du Monde Selon L'Islam*" 254 f. The "sterile wind" may be identical with the "Evil

edifice has been extensively discussed by R. EISLER, in: *Weltenmantel und Himmelszelt* II, 621 ff.

III,15: Again Sūra 2,22. — Cf. ṬABARĪ: *Tafsīr* I, 367.

III,16; For a rather interesting explanation why the ancient Babylonians assumed the colour of heaven to be green, which also sheds some light on the Arabic usage, see F.X. KUGLER: "*Die Sternenfahrt des Gilgamesch*" 549 ff. — See also AL-KINDĪ's "*Treatise on the Cause of the Lazuli Colour Seen in the Air towards Heaven and believed to be the Colour of Heaven*"; Yaᶜqūb b. Isḥāq AL-KINDĪ: *Rasā'il*. See further: E. WIEDEMANN: "*Anschauungen von muslimischen Gelehrten über die blaue Farbe des Himmels*".

III,17: Cf. Sūra 52,5; and I,11 of the present treatise.

III,18: There are numerous traditions about the seven heavens and the substances they are made of; but the order often varies. For a useful synopsis based on the writings of al-Kisā'ī and aṯ-Ṯaᶜlabī see T. FAHD: "*La Naissance Du Monde Selon L'Islam*" 251. — Cf. also: R. EISLER: *Weltenmantel und Himmelszelt* I, 94, + note 4.

Above that ... deserts of light: In *The Book of the Secrets of Enoch* (p. 33) God establishes the light above His throne: "... the foundation for things on high. And there was nothing higher than the light."

Mīṭāṭarūs: The occurrence of this name is quite significant because it indicates where these materials were borrowed from. There can be no doubt that it is identical with *Metatron*, in Jewish Mysticism the angel in charge of God's secrets; the spelling of the name is not securely fixed. On this figure, often identified with Enoch, see G.G. SCHOLEM: *Major Trends in Jewish Mysticism* 67 f.

III,19: The name *Raqīᶜā* seems to be the most frequent as name of a heaven. In *The Book of the Cave of Treasures* (46 f.) the name is explained as "what is solid and fixed", or "firmament" ... "because it hath the dense nature of water..." Note the different substance here. The other names, with the exception of the three last ones, and in a different order, are also mentioned in T. Fahd's synopsis (see above: ad III,18). — Cf. the names in the Talmud (see above: ad III,0).

III,20: Cf. Sūra 52,5; and I,11 and III,17 of the present treatise.

III,21: Cf. III,8 of the present treatise.

III,22: The strange comparison probably refers to an abundance of light.

cal conceptions. Ibn an-Nadīm states that the Sabians (probably the inhabitants of Ḥarrān) directed their prayers towards three celestial pillars (*al-autād*): "Diese Zeiten (Gebete der Sabier) sind verpflichtend nach den Stellen der drei Himmelspfähle, die da sind: der Pfahl des Ostens, der der Mitte des Himmels, und der des Westens." (D. CHWOLSON: *Die Ssabier und der Ssabismus* II, 6, + note 37 on p. 69). Cf. also: *Pirḳê de Rabbi Eliezer* 16, + note 2: "The hooks of the heavens"; and R. EISLER; *Weltenmantel und Himmelszelt* I, 94, note 3.

Then, there is a theory, briefly mentioned in al-Ḫaṭīb al-Baġdādī's treatise on the stars, according to which the stars (probably the planets) move along with their spheres, but every one of them is held back by three pegs or nails in a globe (*Mismār muṯallaṯ fī kura*). (See: AL-ḪAṬĪB AL-BAĠDĀDĪ: *R. Fī ʿilm an-nuğūm;* ms. Aṣir Ef. 190; fol. 18 v. — 19 r.).

Because of its brevity this theory would remain quite obscure, were it not for a similar theory described by AL-BĪRŪNĪ in his *Tafhīm*. He writes there:

> 200. *Ribāṭāt*. This is another name for these stopping-places but among our predecessors (actually: *al-awā'il*) there were those who considered the above described conditions to be apparent not actual (actually: *biltaqlīd dūna l-taḥqīq*). As they knew that the movements of the planets were related to the movement of the sun, they imagined that the planets were suspended to the sun by connecting bands *ribāṭāt*, which were sometimes slack so as to allow of movement when near the sun, and sometimes taut, when the planets were distant from the sun so as to prevent movement and cause retrogression. This is a foolish idea to which no attention should be paid, since there is no advantage to be derived nor results obtainable from it. R.R. WRIGHT (transl.): *The Book of Instruction* 107, nr. 200).

The connection with the Sun introduces a greater degree of sophistication; but basically the two texts seem to offer explanations for the same phenomena, namely the irregular movements of the planets. None tells us who the people were who proposed such a planetary model, but perhaps some Assyrian cylinder seals give us a clue (cf. fig. 70 and 71, and p. 593, n. 1; and p. 213, n. 2 in: R. EISLER: *Weltenmantel und Himmelszelt*). See also: D. PINGREE: *"Astronomy and Astrology in India and Iran"*, esp. p. 242, n. 105-108, where the theory is attributed to the Persians. — And: *The Book of the Secrets of Enoch* 38, note: ORIGEN, *Contra Celsum* VI, 22.

III,14: Sūra 2,22. — Cf. above III,11. The idea of heaven as an

steam produced by the breathing of the water is reminiscent of the Akkadian creation epic. There Tiamat, the personification of the primeval ocean, is killed with the help of the "Evil Wind" which keeps her mouth wide open; from the carcass, Marduk forms the whole of creation (*The Ancient Near East;* ed. by J.B. PRITCHARD, pp. 32 ff.). — In Greek philosophy the whole cosmos is said to be breathing (cf. H. DAIBER: *Aetius Arabus* 146 f., II, 9,1. — And R. EISLER: *Weltenmantel und Himmelszelt* II, 686. Further: IX,5 of the present treatise).

About the stars: Cf. C. HUART: *Le Livre de la Création* II, 12. That the stars were created for protection from the devils is a much more unusual idea than that they were to be ornaments. According to R. EISLER (*Weltenmantel und Himmelszelt* I, 85, esp. n. 1), the belief that stars or constellations exert a terrifying influence occurs commonly in Babylonian tradition. Inspite of the reversed roles, our text could be related to the Manichaean myths of the archontes who are tied to the sky and seduced by the virgin of light. J. van Ess has proved that this myth indirectly made its way into Arabic literature. In the *Al-Kitāb al-ausaṭ,* Nāši' Al-Akbar relates: "Die Dualisten sagen: Die Sterne sind Teufel, die unterhalb der Himmelssphäre angefesselt sind." (J. VAN ESS: *Frühe Muᶜtazilitische Häresiographie* 120 (Arabic), 106 (German), nr. 183). Parts of the text III,8 are quoted in AL-MASᶜŪDĪ's *Murūǧ aḏ-ḏahab* I, 20 (Arabic). — Cf. also: A.J. WENSINCK: "*The Ideas of the Western Semites*" 37 ff. — Cf. ṬABARĪ: *Tafsīr* I, 435.

III,9: Sūra 21,30. — The application of terms borrowed from the crafts of weaving and sewing to cosmological theories was so common in antiquity that R. Eisler could fill two thick volumes with examples (see his *Weltenmantel und Himmelszelt,* esp. the first vol.). Cf. III,24.

III,10: Again, Sūra 21,30. — The peculiar way of counting indicates that only one heaven and one earth can be seen and pointed to. The emphasis of the text seems to be on the correspondence between heaven(s) and earth(s).

III,11: Vaulted: One is reminded of the cosmic models ascribed to Mar Aba (cf. fig. 77 and 78 in R. EISLER: *Weltenmantel und Himmelszelt* II, 622 f.).

III,12: Like the ropes of a tent: For the notion of heaven as a tent see R. EISLER: *Weltenmantel und Himmelszelt* II, 592 ff. — Cf. A.J. WENSINCK: "*The Ideas of the Western Semites*" 44.

The ropes are reminiscent of some rather obscure ancient cosmologi-

Above the throne (*fauqa l-ʿarš*): The author of the statement carefully avoids the notion of God's sitting.

III,8: It is very interesting to compare this cosmogony with the revelations concerning God's creation contained in *The Book of the Secrets of Enoch* (32ff.). Although the latter are much more detailed they comprise essentially the same elements. But since there is no verbal correspondence, a direct literary dependence on this book cannot be assumed. At most it may be said that these materials seem to stem from the same apocryphal tradition, probably by way of oral transmission. It may be useful to quote passages from the more detailed texts in order to shed some light on our very brief ones, which are therefore all the more mysterious. On the creation of the celestial spheres:

> 3. And thus I made firm the waters, that is, the depths, and I surrounded the waters with light, and I created seven circles and I fashioned them like crystal, moist and dry, that is to say, like glass and ice, and as for the waters, and also the other elements, I showed each of them their paths, (viz.) to the seven stars, each of them in their heaven, how they should go; and I saw that it was good. (p. 34)

The stones and the enclosed sea are mentioned, too:

> 1. And thus I made firm the circles of the heavens, and caused the waters below, which are under the heavens to be gathered into one place, and that the waves should be dried up, and it was so. 2. Out of the waves I made firm and great stones, and out of the stones I heaped together a dry substance, and I called the dry substance earth. 3. And in the midst of the earth I appointed a pit, that is to say an abyss. 4. I gathered the sea into one place, and I restrained it with a yoke. And I said to the sea: "Lo! I give thee an eternal portion and thou shalt not move from thy established position." So I made fast the firmament and fixed it above the water. (pp. 34 f.)

By the fish ...: Sūra 68,1. Obviously this fish is not from the story of Jonah as ALAN JONES "feels" (see: *"The Mystical Letters of the Qur'ān"* 11, note 1).

The rocks of Luqmān: Perhaps an allusion to Sūra 31,16. That the earth was established through the mountains is a common idea: Cf. XI,6 of this treatise, and C. HUART: *Le Livre de la Création* II, 44. — According to the *Placita Philosophorum,* Democrit also taught that the earth, in the beginning, was vacillating because it was so small and light (see: H. DAIBER: *Aetius Arabus* 182 f., III, 13,4).

The mysterious description of the origin of the heavens from the

are the eight chief stars that make up the constellation Capricorn. Whether the measure applies to the extension of this constellation remains an open question, of course. In Babylonian astronomy it was called Goat-fish, and it is depicted in this dual form (cf. B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 97, + figure 14 c). — The horned goat appears further at the feet of Marduk standing on water on an ivory throne-pedestal from Babylonia (see: R. EISLER: *Weltenmantel und Himmelszelt* I, 60, figure 6; and 208, figure 32. — Also in: J. PRITCHARD: *The Ancient Near East* I, figure 141). And A.J. WENSINCK, quoting Kisā'ī, states that "the bearers of the throne are horned and that the throne is above the horns" ("*The Ideas of the Western Semites*" 56).

C.A. NALLINO (in: *Raccolta* V, 196, n. 3; and *ʿIlm al-Falak* 139) refers to the Qur'ānic verse Sūra 69,17 ("and upon that day eight shall carry above them the Throne of thy Lord") and tries to identify them as angels. Indeed, AL-QAZWĪNĪ, too, in his *K. ʿAǧā'ib al-maḫlūqāt* I, 56, speaks of eight angels bearing the throne on the day of Resurrection (before that day four bearers are enough).

But perhaps one can do without the angels. Consider for instance the following text from *The Book of the Secrets of Enoch* 12 which subordinates all stars to eight great ones: "There are four great stars; each star has under it a thousand stars at the right of the chariot of the sun; and four at the left, each having under it a thousand stars, altogether eight thousand." — Apparently they are situated on both sides of the ecliptic.

In any case, the number eight is not altogether foreign to ancient cosmological contexts. According to O. NEUGEBAUER (*The Exact Sciences in Antiquity* 99 f.), one of the oldest Babylonian texts and some similar fragments "seem to indicate something like a universe of 8 different spheres, beginning with the sphere of the moon." — Could the eight mountain goats under the throne be a relic of such an ancient cosmography? Cf.: AL-QAZWĪNĪ: *K. ʿAǧā'ib al-maḫlūqāt* 59.
AḤMAD B. ḤANBAL: I, 206 f. ABŪ DĀ'ŪD: *Sunna* 19 (nr. 4723). AT-TIRMIḎĪ: *Tafsīr*, Sūra 56; *Ǧahannam* 6; *Ǧanna* 8. IBN MĀǦA: *Muqaddama* 13, nr. 193. AL-ḤĀKIM: *al-Mustadrak* II, 288.

III,5: An enclosed wave and a secured roof: Cf. Sūra 52,5. — For an explanation see I,11 of the present treatise. Cf. AT-TIRMIḎĪ: *Tafsīr*, Sūra 57, nr. 3352.

III,7: G. VITESTAM: *Kitāb ar-Radd* 21; but the text varies slightly.

hinein, der Mond dagegen geht elf Jahre, und er geht in das Bewohnte nur sechs Stunden (Wochen)." (*Midrash Kōnen* 187).

Finally, the 500 years become a cosmic measure and are applied to the various heavens, their diameters and distances: "Von der Erde bis zum Raki^{c}a ist ein Weg von 500 Jahren, die Dicke des Raki^{c}a beträgt 500 Jahre und ebenso jeder einzelne Raki^{c}a. Zwischen jedem Raki^{c}a ist ein Weg von 500 Jahren. Oberhalb von ihnen sind die heiligen Tiere... Oberhalb von ihnen ist der Thron der Herrlichkeit." (*Traktat von den himmlischen Hallen;* in: A. WÜNSCHE: *Aus Israels Lehrhallen* 38 f.). One wonders whether the "holy animals" mentioned in this text are eight mountain goats, as in III, 4 of the present treatise. They do seem to carry the throne. — As in our Arabic texts, the figure of 500 years is also applied to measure the depth of the earth and the distances between the various earths (see: *Gleichnisse des Königs Salomo;* in: A. WÜNSCHE: *Aus Israels Lehrhallen* II, 24). But this text is not primarily cosmological; it does not even state the number of earths in its scheme.

The Midrashic texts leave us as much in the dark as their Arabic parallels concerning the real meaning of this measure of 500 years. The *Midrash Kōnen* even suggests a purely verbal derivation of the number: The numerical value of וימתחם (= "and He spread it out"; Is. 40,22) happens to be 504, and other words in the context of the creation story add up to a similar amount; the figures above 500 are then subtracted for one reason or the other, and the result is 500 exactly (in: A: WÜNSCHE: *Aus Israels Lehrhallen* 179). But the text from the *Pirḳê de Rabbi Eliezer,* quoted below in IV, 28, suggests a better explanation: The 500 years are to be connected with a cycle, according to the text a solar cycle of 28 years. Once in such a period of time the Sun reaches the central aperture in the firmament. At this point it would have covered the distance, over the 28 steps of 500 years each for the seven earths and heavens and the intervals between them, up to the foundations of God's throne. However, in this case the 500 years would cover the whole of the ecliptic, not only 180° corresponding to half the circumference of the earth. Cf. O. NEUGEBAUER: *"Notes on Ethiopic Astronomy";* especially pp. 51-61.

III,4: Eight mountain goats: Al-Mas^{c}ūdī states not only that the South-Pole was regarded as the height of heaven, but also that it was located at the head of Capricorn (*K. at-Tanbīh* 8 and 13).

Since the eight mountain goats are placed right below the throne, the simplest explanation of their cosmological identity is to assume that they

flections, these traditional measures must have had a positive function towards an increasing knowledge of the cosmic dimensions; he writes:

> Les traditions musulmanes disent que d'un ciel à l'autre il y a la distance de cinq cents ans de marche, et que chaque ciel est également de la grandeur de cinq cents ans de marche. Les anciens ont émis une appréciation à ce sujet: El-Fézari a prétendu qu'il y a, entre chaque ciel, la distance de trois mille ans de marche. L'Almageste mentionne les quantités afférentes aux corps des étoiles, à leurs distances du point central de la terre, à leur distance l'une de l'autre dans les espaces supérieurs, la mesure de l'axe de chaque ciel, sur lequel il tourne, la grandeur et l'amplitude des sphères, la situation de la terre et ses mesures en longueur, largeur et circonférence, quantités dont Dieu seul a la vraie appréciation! Si ces mesures sont exactes, ce ne peut être qu'en vertu d'une révélation, car les forces humaines sont impuissantes à produire de pareils calculs; et si elles sont obtenues par conjecture et estimation, la tradition des Musulmans est en ce cas plus vraie et mérite mieux la confiance; et si elle est vraie, elle peut s'interpréter de deux manières: la première est l'éloignement en distance, la seconde, l'impuissance où est l'homme de s'élever à cette hauteur. (C. HUART: *Le Livre de la Création* II, 8).

For a long time it probably was merely a question of choice the figures of which tradition one wanted to adopt (cf. F. SEZGIN: *Geschichte des Arabischen Schrifttums* V, 189: Hermes taught that the circumference of the earth was 9,000 farsaḫs. — Ibn Rustah, on the other hand, allots it 8,000 farsaḫs ((i.e. 24,000 miles; 3 miles = 1 farsaḫ)): see *K. al-aᶜlāq an-nafīsa* 17, French tr. by G. Wiet: p. 16).

The measure of 500 years also occurs elsewhere in Semitic literature, although little is known about a possible correlation between the respective texts. Basically the 500 years appear to be a measure of distance on earth. Thus the Oxford manuscript of the *Pirḳê de Rabbi Eliezer* gives the diameter of the earth, according to a certain Rabbi Joshua, as equal to a journey of 500 years; but the editor or translator has given preference to the variant "60 years" (see *Pirḳê de Rabbi Eliezer* 29, + note 5). — Similarly the *Midrash Kōnen* gives the measures of the earth in length and width in terms of years: "Die Länge der Welt ist 500 Jahre und ihre Breite ist 500 Jahre. Sie ist gerundet. Und das große Meer, welches Okeanos heißt, umgibt sie." (A. WÜNSCHE: *Aus Israels Lehrhallen* III, 187; cf. 178 f.).

From earth the measure of 500 years was transferred to the orbit of the Sun: "Die Sonnenkugel geht vom Morgen bis zum Abend 500 Jahre und sie geht in das Bewohnte nur sechs Stunden (Wochen) im Jahre

in ancient Egypt, one degree was 500 stadia distant from the next one (i.e. Ptolemy's value; cf. O. NEUGEBAUER: *A History of Ancient Mathematical Astronomy* II, 939). The 'years' of our Arabic text could be an "adaptation" of these 'stadia', since one cannot expect accuracy in such traditions. One could conclude, therefore, that the 28 steps of 500 'years' correspond to an equal amount of degrees, roughly the distance covered by the Moon on each side of the Equator. — Or should one think of the Phenix-period of 500 years? (cf. F.K. GINZEL: *Handbuch der mathematischen und technischen Chronologie* I, 177 f.).

It is most surprising, of course, to find cosmic distances measured in units of time. But there are indications that this amazement is at least partly due to a blurring of the terminological differences between the two Arabic terms *ʿām* and *sana*, both commonly translated as "year" without differentiation. The entries under *ʿām* and *sana in* LANE'S *Lexicon* state that "the *sana* is from any day from which one commences a reckoning to the like thereof, and the *ʿām* is only (a period of) a winter and a summer" (V, 2202). Further:

> ... every *ʿām* is a *sana*, but every *sana* is not an *ʿām*; for when you reckon from a day to the like thereof, that is a *sana*, and there may be in it half the summer, and half of the winter, whereas the *ʿām* is only a winter and a summer, without interruption. (ibid.)

It is also said that "the *sana* is longer than the *ʿām;* that the former is 'a single revolution of the sun', and that the latter is applied to the (twelve) Arabian months (collectively)." (ibid.) — But the reason is more enlightening: "It is said to be called *ʿām* because of the sun's *ʿawm* (or coursing) through all of its zodiacal signs (during the period which it denotes)" (ibid.). If this reason is correct, and if an *ʿām* is always a winter and a summer regardless of the date on which the reckoning is started, it seems fairly clear that the *ʿām* originally is not the measure of time "year", but the distance covered by the Sun on its course. Apparently it is a similar combination of units of time and space as is known to have been in use in ancient Babylonia (cf. B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 55 f., and 76. — F.O. HULTSCH: *Griechische und Römische Metrologie* 382 f.). Note also that the 7 climata are defined in units of time: The hours of the longest day.

Interestingly an-Nuwayrī ascribes the measure of 500 'years' to the Mutakallimūn (*Nihāyat al-arab* I, 207 ff., where he has assembled a useful synopsis of the traditional measures). If any historically reliable conclusion can be drawn from Muṭahhar b. Ṭāhir al-Maqdisī's re-

Cf. also the discussion between al-Bīrūnī and Ibn Sīnā on the possibility of other worlds (S.H. NASR and M. MOHAGHEGH: *Al-Biruni and Ibn Sina* 19-27. Further: Porphyry's view of the heavens as zones (cf. below note A, III, 91).

III,1: Sūra 65,12 (note that Arberry has "earth", in the singular).

III,2: By its very regularity, this scheme of seven earths and seven heavens with the same distance between every two of them, and the distance between the highest heaven and the throne being equivalent to the whole, seems to betray its origin in some system of coordinates. But the few specifications at hand hardly allow us to ascertain its identity. As was discussed above (p. 91), the alleged location of the throne in Capricorn suggests that the 28 steps of 500 'years' are to be applied along the ecliptic. The fact that AN-NUWAYRĪ, in his *Nihāyat al-arab* (I, 41), places the Sun in summer in the fifth, in winter in the seventh heaven under the throne, gives further confirmation to the conjectured location of the throne and its relation to the solar ecliptic (and note: For the Babylonians Capricorn was the 'sanctuary of Ea'. See: A.J. WENSINCK: *"The Ideas of the Western Semites"* 65; he quotes from Steinmetzer in Sachau's Festschrift, p. 62 ff.). Below are a few more parallels that indicate the same interpretation of the underlying cosmological system (it should be clear, however, that they are not quoted as definite or confirmatory proofs).

The treatise *Hérmippos ē peri astrologías* by the Byzantinian scholar Ioannes Katrarios (wrote in 1322 A.D.) shows that a division of the ecliptic into 28 parts did indeed exist. This results from a combination of the scheme of seven climates with the four quarters of the ecliptic: Every such quarter is divided into seven parts of 12°51'26", roughly 13°. According to E. HONIGMANN (*Die sieben Klimata* 101), this is an otherwise unknown, but apparently ancient astrological theory of the climates. Do our Arabic texts reflect the same ancient theory?

Another text, unfortunately rather uncertain, also alludes to a coordination between the division into degrees and a multiplicity of worlds: According to D. CHWOLSON (*"Über die Überreste"* 477), the ancient Chaldeans believed that there was a new creation lasting 1000-3000 years for every degree (apparently along the ecliptic). His source seems to be the rather obscure astrologer Tinkalūša, hence hardly an ancient Chaldean.

Whatever the equivalence of 500 'years' may be in modern figures, 500 is a curious number that occurs in many contexts in antiquity. Thus,

As R.H. Charles notes, the Talmudic description of the seven heavens "attests the influence of a growing ethical consciousness" (p. xxxix). It is instructive for the early development of cosmological thought in Islam to compare the Talmudic texts with those found in Muslim treatises: The latter seem to be more faithful in the transmission of the ancient data, less subordinated to ethical instruction and hence more conducive to the promotion of cosmological or geographic interests. Muṭahhar b. Ṭāhir al-Maqdisī's summary of texts about the number of earths shows by which ways these ideas were known to have entered the stores of Muslim culture and how they were received.:

> On est d'avis différent au sujet du nombre des terres. Dieu a dit: "C'est Dieu qui a créé les sept cieux et autant de terres" (S. 65, 12). Il est possible que cette image s'applique au nombre et à la disposition en étages successifs. Certaines légendes rapportent que ces terres sont les unes au-dessus des autres, que l'épaisseur de chaque terre est équivalente à cinq cents ans de marche, et que l'intervalle entre chaque terre est aussi de cinq cents ans; quelques-uns même ont énuméré, pour chaque terre, une population d'une description et d'une forme étonnantes. Chaque terre a reçu un nom particulier, comme chacun des cieux. Quelques-uns ont prétendu que dans la quatrième terre se trouvent les serpents qui dévorent les damnés, et dans la sixième, les pierres qui les frappent. Celui à qui son âme inspirerait un vif désir de prendre plus ample connaissance de ces choses, n'a qu'à lire les livres de Wahb (ben Monabbih), de Kaᶜb (el Aḥbâr), et de Moqâtil; si cette science lui agrée, il y prendra intégralement son plaisir; car ces livres sont exposés au public, et jouissent d'une grande autorité. Une tradition qui se rattache à ᶜAṭâ ben Yasâr, au sujet du passage du Qor'ân cité ci-dessus: "C'est Dieu qui a créé les sept cieux et autant de terres", rapporte que cet auteur a dit: Dans chaque terre il y a un Adam, un Noé comme le vôtre, un Abraham comme le vôtre. Mais Dieu sait mieux et plus solidement (la vérité!). Cela n'est cependant pas plus étrange que la doctrine des philosophes qui disent qu'il y a des soleils et des lunes en grand nombre: que chaque climat a son soleil, sa lune et ses étoiles. Les anciens ont dit que les terres sont au nombre de sept, dans le sens de voisinage et de contiguité, avec séparation des climats, non dans celui de superposition et de compression; les Musulmans qui s'adonnent à la spéculation penchent vers cette explication. Il y en a parmi eux qui croient que les terres sont au nombre de sept en montant et en descendant, comme les degrés d'une échelle. Certains prétendent que la terre est partagée en cinq zones, septentrionale, méridionale, équinoxiale, tempérée et centrale. (C. HUART: *Le Livre de la Création* II, 39 f.).

the preservers of tradition lest the statements about the stylus might become too much spiritualized. Cf. above III,3 and 5.

III,0: The seven heavens and the seven earths: As regards the number of heavens and earths, the greatest variety is found in the old cosmological treatises. Thus, according to Bar Hebraeus, Bardaiṣan of Edessa spoke of as many as 366 worlds (see H.J.W. DRIJVERS: *Bardaiṣan of Edessa* 118); and according to STRABON, Crates had place for four worlds (Book 2, ch. V, 34). In his introduction to W.R. Morfill's translation of *The Book of the Secrets of Enoch* (pp. XXX-XLVII), R.H. Charles compiled the most comprehensive study of "The seven Heavens — an early Jewish and Christian belief". In his view this "belief" originated from cosmological speculations on the sacred number seven (cf. the seven walls of the cities Erech and Ecbatana) or Babylonian planetary theories (although he explicitly states that the planets are assigned to *one* heaven only). Finally this belief made its way into Islamic literature from the Jewish and Christian Apocrypha, especially *The Book of the Secrets of Enoch* which is "the most elaborate account of the seven heavens that exists in any writing or in any language." (p. XXXVI) — R.H. Charles even believes that "some form of the Slavonic Enoch seems to have been in Mohammed's hands" (p. XLVII). This seems more likely, however, in the case of the Qur'ān interpreters and their informants. Charles' synthesis of Talmudic teachings is most enlightening on the subject of the seven heavens:

> Some thought as the Rabbi Jehuda that there were two heavens, *Chagiga* 12ʾ, but Rabbi Simeon ben Lakish enumerated seven. This latter view was the usual one. In the *Beresh, rabba* c. 6 and the *Chagiga* 12ᵇ, the seven heavens are as follows. The lowest which is called *vilun* is empty. In the second, named *rakīa,* are the sun, moon, and stars. In the third, named *shechaqim*, are the mills which grind the manna for the righteous. In the fourth heaven, *zebul,* are the heavenly Jerusalem, the temple, the altar, and Michael. In the fifth, *maon,* are the angels who sing by night, but are silent by day in order that God may hear the praises of Israel. In the sixth, *machon,* are the treasuries of the snow, hail, rain, and dew. In the seventh, *aravoth,* are judgement and righteousness, the treasures of life, peace, and blessing, the souls of the departed pious as well as the spirits and souls yet to be born, and the dew wherewith God will awake the dead. Finally there are the seraphim, ophannim, chayyoth and other angels of service, and God Himself sitting on a throne. (pp. XXXVIII-XXXIX).

somewhat disconcerting that the only support cited by the Midrashic text is the Biblical verse Prov. 8,21: "Endowing with wealth those who love me". The "proving reason" is the numerical value of the Hebrew word יש that occurs in the verse: 310. The corresponding Arabic letters يش have the same numerical value. (see *Gan ᶜEden:* in: A. WÜNSCHE: *Aus Israels Lehrhallen III,* 22).

II,8: Again, it remains mysterious why there are just 315 laws set down for the whole of mankind. This is reminiscent of Bardaiṣan's emphatic denial of a definite number of laws. His opponents, the Chaldeans or astrologers, taught that each "climate" on earth, under the rule of one of the planets, had its own law. Bardaiṣan accepted the geographic division of the earth into seven "climates", but his factual knowledge of the very diverse customs and laws within a single "climate" enabled him to refute the legal theory connected with it (cf. E. HONIGMANN: *Die sieben Klimata* 92 ff. — further: H.J.W. DRIJVERS: *Bardaiṣan of Edessa).* — And one may wonder whether it is a mere coincidence that the number of major cities known in Ma'mūn's time is given as 343 (see E. HONIGMANN: ibid., 157). The number of laws may have equalled that of major cities known at an earlier time, when less of them were known.

II,9: The Torah, too, was believed to have been created long before anything else came into being, namely 2,000 years earlier (J. NEUSNER: *The Way of Torah* 1). For similar traditions see ṬABARĪ: *Ǧāmiᶜ al-bayān* XXIX, 14 ff.

II,10: That the stylus was the first thing to be created is a fairly common view in Islamic tradition: Cf. AT-TIRMIḎĪ: *Qadar*, bāb 17; *Tafsīr*, Sūra 68; ABŪ DĀ'ŪD: *Sunna* 16; AḤMAD B. ḤANBAL : *Musnad,* 5,317.

II,11,12: Cf. above II,3.

II,13: According to the conjecture presented in my historical analysis (p. 89), the length of 500 years would be equivalent to 180°; the stylus, therefore, would extend over the whole sky visible in one night or day (cf. below III,2).

II,14: It is difficult to see how this concrete origin of the stylus tallies with the light-nature ascribed to it in the previous fragment.

II,15: Again, ink dripping from the tip of the stylus (or pen) is more concrete than is to be expected in this context. This may reflect the fear of

... Son mouvement a lieu non comme celui des planètes, de l'Occident à l'Orient, mais comme celui des douze signes, de l'Orient à l'Occident. Il se déplace de 3'11" en un jour et une nuit, de 1°33' en un mois, et de 19°20' en un an. Il fait donc une révolution complète en 18 ans, 7 mois et 16 jours. Parce que ce dragon (*Ataliā*) est en dessous du soleil et de la lune, chaque fois que la lune est en conjonction avec le soleil dans le signe et le degré où se trouve la tête du Dragon (*Ataliā*) ou sa queue, le Dragon (*Ataliā*) se tient devant la lune et cache aussi le côté du soleil... (F. NAU: *"La cosmographie"* 254).

This text raises further questions: For instance, if this dragon, serpent or fish carries the earth and revolves around the whole Zodiac, does the earth rotate with it? Secondly, is it identical with the cosmic snake wound around God's throne? (I,8). Since revelation is said to descend "as along the links of a chain," this may explain the combination of "*Nūn*" in Sūra 68,1 with "*qalam*" (= stylus).

II,3: Length of the Guarded Tablet: 100 years — if our assumption is correct that 500 years equal 180° (see above pp. 89 ff.), 100 years equal 36° (cf. below III, 2). The personification of the stylus appears less strange when seen in the context of Mesopotamian conceptions: The goddess Nidaba was believed to be the power present in all reeds (T. JACOBSEN, in: *Before Philosophy* 144). Cf. also: *The Book of the Secrets of Enoch* 28: The angel Vretil.

II,4: The precious stones supposedly guarantee the durability of the writing, and the colours probably are those of heaven and earth.

II,5: "He looks at it 360 times while He creates..": This is also said of the Torah (see: *The Universal Jewish Encyclopedia*, art. "*Creation*").

II,7: Ibn Abī d-Dunyā's book has recently been edited with the title *The Noble Qualities of Character* by J.A. BELLAMY. The tradition quoted here is found on page 6 f., Arabic text.

The number of creatures — 300 and some tens — remains mysterious. The closest parallel I have found is the establishment of 300 in heaven and 300 on earth in the Akkadian creation epic *Enūma eliš* (quoted in: *The Ancient Near East* 37).

Regarding the number, it is noteworthy that the Midrash *Gan ᶜEden* speaks of 310 worlds existing in ᶜEden. However, this may be a mere coincidence, since the relation of this number of worlds to the number of God's creatures in the Arabic tradition remains unclear: Whether by a literary connection or by identity in meaning or by mere association. It is

> Par premier, ils entendent la *plume*, c'est-à-dire, pour eux, la Raison universelle... (C. HUART: *Le Livre de la Création* I, 149, 151, 155).

However, all the preceding texts establish some connection with philosophical notions, not with cosmological ones. For the latter we have to go back to the cosmology of the Babylonians where indeed the sky is conceived as a tablet and the stars as the engravings of a stylus (cf. P. JENSEN: *Die Kosmologie der Babylonier* 45, and F.X. KUGLER: *Sternkunde und Sterndienst in Babel* II. Buch, I, 126; — and further: R. PARET's article "*ᶜIlliyyūn*" in *EI*[2] III, 1132 f. Ṭabarī actually identifies this "book" with the seventh heaven.

II,1: Sūra 85,22.

II,2: Sūra 68,1. — The meaning of '*Nūn*' in this verse appears to be lost, either by historical accident or design, in any case is much disputed; perhaps as a result, the cosmological significance of tablet and stylus is also obscured. Sometimes only the letter '*Nūn*' is written, thus assimilating it to the other mysterious letters at the head of some Sūras. But this assimilation is probably false because these letters occur in groups. The explanation proffered by Ibn Masᶜūd (cf. III, 8 of this treatise) is more likely to be correct: It is the fish on top of which God created the earth. Since this fish is elsewhere described as bent upwards with its two extremities meeting in heaven or under the throne (III, 36 and III, 38;43) it probably represents the cosmic dragon or serpent (*Ataliā*) known from Syriac cosmography (cf. the representation on the front page of the Pelican Book *Before Philosophy*, by H. FRANKFORT, H.A. FRANKFORT, J.A. WILSON, T. JACOBSEN). The cosmological and astrological significance of this dragon, serpent or fish can easily be grasped by considering the following Syriac description:

> Nous l'avions écrit auparavant, mais des hommes renommés dans cette science disent que les éclipses et la disparition des astres ont lieu à cause du Dragon (*Ataliā*). Pour confirmer leurs paroles, ils dessinent une figure de ce genre, et ils disent que le dragon (*Ataliā*) est un corps qui a une figure de dragon; souvent aussi ils l'appellent dragon et serpent. La largeur de son corps est de 24°, et la longueur est de 180 degrés, ce qui fait six signes du zodiaque ou la moitié de la sphère; on voit ainsi dès maintenant que sa tête et sa queue se font vis-à-vis et sont toujours diamétralement opposées. Ce dragon (*Ataliā*) marche toujours dans deux signes du zodiaque, sa tête dans l'un et sa queue dans l'autre. Le milieu de son corps est en dehors de toute la couronne des signes du zodiaque, vers le nord, du côté du char, car il est courbé et a la forme d'un demi-cercle, comme un arc

the greatest distance known at that time, the extension of the earth (cf. pp. 88 ff.).

I,34: On the basis of the manuscripts it cannot be decided whether one should say 'abysses' here or 'air'. It is noteworthy that the Persian term *Thwāsha* seems to share the same ambiguity, as the following text with varying translations shows: "Raum und Zeit, Thwāsha und Zurvān werden in Yasna 72:10 als wesensgleiche Mächte zusammen genannt. Nach Bidez und Cumont bedeutet Thwāsha 'Raum', nach Nyberg 'Luftkreis', nach Darmsteter 'Himmel'." (B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 231).

As in I,7 the comparison with a dome, so here that with a tent is apparently an allusion to a cosmic model of a tent; traces of it are also found in III, 2 of the present treatise, and in AL-BĪRŪNĪ: *The Book of Instruction* 107, nr. 200; further also in AL-ḪAṬĪB AL-BAĠDĀDĪ: *Risāla fī ʿilm an-nuǧūm* fol. 18 v.

I,35: Again, the distance of 36.000 years probably tells us only which number was considered the highest.

II,0: Tablet and stylus (or pen) are well known in the context of the Islamic theory of revelation, but not so in Muslim cosmology. The brief texts here are quite obviously a conglomeration of variegated conceptions; sometimes the reader may think of a clay tablet on which a scribe writes by making impressions with a stylus of sufficiently firm material, at other times of a writing board or some papyrus on which he writes with pen and ink. Concerning the various traditions about forms of sacred writing see IBN AN-NADĪM: *Fihrist* 21 ff.

Here, too, some texts from Muṭahhar b. Ṭāhir al-Maqdisī may give an idea of the varying interpretations these two terms already had in the tenth century:

> ... il a fait de la table un intermédiaire entre lui et les anges, de même que ceux-ci sont des intermédiaires entre lui et ses prophètes, et ceux-ci entre lui et ses créatures...
>
> D'après les mêmes, le sens de *Table bien gardée* est l'âme universelle, parce qu'elle est inférieure à la raison en rang, et que celle-ci la dirige comme la plume agit sur la table bien gardée; et ils prétendent en outre que la plume et la table ne sont ni récentes ni créées...
>
> D'autres ont prétendu que la table désigne le monde inférieur, et la plume le monde supérieur; or, le supérieur influe sur l'inférieur. D'autres encore disent que la plume est l'esprit, et la table le corps...

I,26: This is the start of a succession of texts about the veils that separate God from His creatures. The conception of such veils may be rooted in the traditions of the various oceans that surround the earth, but it is further theologically attenuated, spiritualized. In the process these separations have been increased to fantastically high numbers, but the basic idea is still the same: God may be separated from His creation, yet He is still a part of this universe; He has not become a non-being, not even in the Neoplatonic sense, nor a mere omnipresent world-spirit, as in Ǧahmīya theology or in pantheism. Again, the tenth-century author Muṭahhar b. Ṭāhir al-Maqdisī supplies similar texts and clarifying reflections on the issues involved. He writes:

> Sachez que le voile n'a pas besoin de définition par simple citation, parce qu'il est bien certain que Dieu est voilé à sa créature; on ne dit pas absolument qu'il soit défini, parce que le voile peut s'expliquer de différentes façons. Wahb, fils d'Abou-Sélâm, rapporte qu'il interrogea le prophète de la façon suivante: "Dieu se cache-t-il à ses créatures par autre chose que le ciel?" A quoi le prophète répondit: "Oui, entre lui et les anges qui portent le trône, il y a soixante-dix voiles de lumière, soixante-dix de feu et soixante-dix de ténèbres", et il en énuméra jusqu'à quinze. Dans la tradition relative à l'ascension de Moḥammed, il est dit: «Je m'arrêtai à une mer faisant partie de la mer Verte. Or, on nous cria: Faites reposer Moḥammed dans la lumière en tremblant", et il mentionna un certain nombre de mers de lumière... Ce n'est point là une de ces choses qui nécessitent une définition expliquant l'action de voiler, parce que ce n'est point un corps s'interposant entre celui qui voile et la chose voilée, mais représente l'éloignement de la sensation et la renonciation à en embrasser l'idée. Cela rappelle aussi les qualités de grandeur et de puissance réservées à Dieu, à l'exclusion de ses créatures. Cette représentation fait plus d'effet auprès des hommes, et répond mieux à la magnification du Créateur et à l'amplification que l'on donne à sa puissance pour le faire désirer et le rendre effrayant, puisque la plupart des hommes considèrent les choses que leurs sens ne peuvent atteindre et qui ne se représentent pas dans leur esprit, absolument comme un non-être. (C. HUART: *Le Livre de la Création* I, 169 f).

For an enlightening discussion of the role of the veils in al-Ǧazālī's mystical theology see W.H.T. GAIRDNER: *Al-Ghazzālī's Mishkāt al-anwār*.— Further: L.E. GOODMAN: *Ibn Tufayl's Hayy Ibn Yazqan* 153, + note 221).

I,33: The distance of 500 years is here probably only reminiscent of

I,22: LANE's *Lexicon* gives the following explanation of the mysterious term *aṭīṭun*:

> The sounding, or the like, or the sound, or the like, (and particularly the creaking, or creaking sound, and the moaning, or moaning sound), of a camel's saddle when new; and so *aṭṭun*, of the litters and saddles of camels when the riders are heavy thereon; and the former, also, of a door; said, in a trad., of the gate of paradise, by reason of its being crowded; and of a plaited or woven thong when stretching; and of the back (when strained); and of the bowels, and of the belly, or inside, by reason of hunger, or by reason of vehement hunger; and of camels, by reason of their burdens, or by reason of the heaviness of their burdens; and the prolonging of the cries of camels: but 'Alee Ibn-Ḥamzeh says that the cry of camels is termed *rughā'un*, and that aṭīṭun signifies the sounding, or sound, of their bellies, or insides, by reason of repletion from drinking. (I, 66).

Inspite of the long explanation of the term it remains mysterious why it is here ascribed to the *kursī*. In his *Tafsīr*, ṬABARĪ quotes a conversation of Muḥammad with some of his companions in which the Prophet claims to hear the *aṭīṭ* of heaven (*Tafsīr*, on Sūra 21,21; XVII, 13). But there it seems fairly clear that *aṭīṭ* is used to underscore the fullness of heaven: There is no place without angels. In the present text the term could also have this meaning insofar as the *kursī* is so full of the heavens and earths in it that there remains no empty space. But a more likely interpretation could be that the two feet of the One on the throne exert so much pressure on it that it cannot but emit that sound. The astrophysical implications are obvious: By reason of a peculiar cosmology, not just by allegiance to some Greek philosopher, there is no place for a vacuum, and there is a physical pressure from the outer borders of the universe towards the center. (Cf. A.M. HEINEN: "*A Priori Positions*" 56 f.). — The theologians opposed to the Ǧahmīya sect apparently used this peculiar cosmology to stress the fact that God has a definite and concrete place in the universe (cf. G. VITESTAM: *Kitāb ar-Radd* 26).

The text is found in ṬABARĪ: *Tafsīr* V, 398, nr. 5789.

I,23: The primitive formulation of a stereographic problem?

I,24: In the cavity of the footstool: The intention is probably to allow for the semi-globular shape of the universe. — Cf. ṬABARĪ: *Tafsīr* V, 398, nr. 5790.

I,25: First part of statement in ṬABARĪ: *Tafsīr* V, 399, nr. 5795.

Al-Bākī is an ocean of sweet water (probably an explanation of the sweetness of rain-water) which confirms that we deal here with a cosmic entity, not a geographic ocean. For this reason P. Anastase-Marie's identification of al-Bākī with the Red Sea (cf. above p. 187) cannot be maintained.

I,15: Compare the following text from Wahb b. Munabbih: "(Die sakīna aber war wie der Kopf einer Katze aus einem Stück) grünen (Chryso)lith. (Ǧūbair tradierte nach aḍ-Ḍaḥḥāk: ihr Kopf war aus Sma) ragd, ihre Rückseite aus Perlen, (ihr Schwanz aus Hyazinth), ihre Beine aus Perlen." (Raif Georges Khoury: *Wahb B. Munabbih* I, 45). —

The four pillars seem to agree with the four throne-bearers mentioned by Al-Qazwīnī in his *K. ʿAǧāʾib al-maḫlūqāt* 56), although there they appear to be angels. And on the Day of Resurrection they will be increased to number eight.

While I,3 seems to speak of the tongues of the throne as organs, this text obviously conceives of them as languages. This has far-reaching consequences for the theory of languages. As G.G. Scholem wrote in his *Major Trends in Jewish Mysticism* (17), language on this cosmic basis reflects the mystery of creation. Because of the connection with God's throne, one can say here as well that language

> ... is not simply a means of expressing certain thoughts, born out of a certain convention and having a purely conventional character, in accordance with the theory of language dominant in the Middle Ages. Language in its purest form... reflects the fundamental spiritual nature of the world; in other words, it has a mystical value. Speech reaches God because it comes from God. (Cf. R. Arnaldez: *Grammaire et thèologie* 43 ff.).

I,16: The question remains why the substance pearl is introduced here, and why the length of the stylus is given as 700 years and not 500 years which seems to be the common figure (cf. II, 13). Cf. below III,2.

I,17: Sūra 11,7. — Cf. Genesis 1.

I,19: Cf. above I,5 (+ Commentary) and I,10. Cf. Ṭabarī: *Tafsīr* V, 399 (somewhat different).

I,20: Ṭabarī: *Tafsīr* V, 398.

I,21: "*Al-Shaykhān — The two Sheykhs*, is a title peculiarly applied to the first two Khaleefehs, Aboo-Bekr and 'Omar" (Lane: *Lexicon* IV 1629). But in this passage al-Buḫārī and Muslim must be meant. Cf. al-Ḥākim: *Al-Mustadrak* II, 282 (slightly different).

already known to the Arabs when the first translations of geographical treatises became available in ᶜAbbāsid times is not even taken into consideration. As a result the "corrections" of later writers are welcomed instead of being suspected as facile adaptations.

The theory of an "orthographic corruption of Buntus" into Nīṭaš (or Nīṭas), dating back to a period when no Greek geographical treatise was as yet available in translation, is not only improbable but also unnecessary. In Babylonian cosmology the term *nītu* (= enclosure) was used together with *apsū*, a word denoting 'ocean' (see P. JENSEN: *Die Kosmologie der Babylonier* 250 f.). The linguistic relationship between *nītu* and Nīṭaš (or Nīṭas) can only be a matter of conjecture here; yet it may more rightly be considered than that between Buntus and Nīṭaš (Nīṭas). If it could be established, it would shed new light on the earliest geography developing among the Muslims. (Cf. also A.J. WENSINCK: *"The Ocean"*; and: *Pirḳê de Rabbi Eliezer* 16, n. 3. Further: P. JENSEN: *Die Kosmologie der Babylonier* 250 f.; and: W. KIRFEL: *Die Kosmographie der Inder* 15 ff.).

The comparison between a spring (*ᶜayn*) and the surface of the ocean could simply be explained as based on the quantity of water in both. But some texts seem to suggest that an ancient theory of a spring in the ocean may have occasioned the choice of this rather unusual comparison. Thus, according to S. MAQBŪL AḤMAD (*EI*[2] II 583), the Atlantic Ocean was called "a Sea of Darkness and a Muddy Spring" (*al-ᶜayn al-ḥami'a*). Cf. AN-NUWAYRĪ: *Nihāyat al-arab* I, 41). Further, the Babylonians apparently believed that there was a spring in the midst of the ocean. In the creation myth *Bītu ellum* the following text is found:

> Alle Länder waren Meer, die Quelle (?), die inmitten des Meeres ist, war eine Wasserröhre — damals wurde Eridu gemacht, Esangila gebaut... Heidel: "The spring which is in the sea was a water pipe." Ebeling: "Als die Mitte des Meeres eine Schöpfrinne war." (Quoted in. K. RUDOLPH: *Theogonie, Kosmogonie und Anthropogonie* 184 + Note 3).

ARISTOTLE mentions and rejects the theory that the sea has sources (*Meteorologica* 123: II, 1-353 b 1).

The mountain of diamond surrounding the earth is probably identical with the better known mountain Qāf. Interesting, though hardly fitting, is aš-Šahrastānī's explanation of this mountain as the shadow of the earth cast into surrounding space (see: *Al-Hay'a wa l-Islām* 160 ff.).

He then reproduces the following useful table of correspondences of the names for seas mentioned in the writings of al-Qazwīnī and al-Kisā'ī (the tentative identification of them in the geographers is drawn from P. ANASTASE-MARIE: *Nušū' al-luġa al-ᶜarabīyya* 83-4):

	Qazwīnī	Kisā'ī
Mer Noire	بنطس	بيطش
Méditerranée	الاصمّ	الاصمّ
Océan	قبيس	قينس
Pacifique	الساكن	الساكن
Indien	المظلم	المغلب
Atlantique	مرماس	المأنس
Mer Rouge	الباكي	الباكي

C. Pellat adds the following interpretation:

> Mais il est probable que *qaynas* désigne l'Atlantique; d'autre part, *marmās* de Qazwīnī et *al-ma'nas* de Kisā'ī, qui répondent au *jabal al-Mās* de nos mss., ne sont sans doute, ainsi que me le suggère M. Colin, que des variantes de *baḥr māyōtis Palus Maeotis,* Mer d'Azov ou de Zabache; cf. Sāᶜid al-Andalusī, Ṭabaqāt. trad. Blachère, 33.

Unfortunately such "doubtless" interpretations can hardly remove any doubt from our minds, especially not the one that such names may have meant something different for different scholars at different times. Sensitivity for the historical development of ideas, such as we find for instance in the geographical chapter of W. WOLSKA's *La Topographie Chrétienne* 245 ff.), seems to be altogether missing. Otherwise one cannot fail to notice an interesting case of ancient cosmology or cosmography entering into a productive union with a more developed geography.

In view of the age of the textual sources in which these names of oceans occur, and the conceptions closely connected with them, their derivation from Greek geography appears particularly anachronistic. The possibility that these names and the corresponding notions were

tradition, of a text about the various oceans of the world referred to in numerous Arabic treatises from various centuries. (Cf. A.J. WENSINCK: *"The Ocean"*). The number and the names of these oceans vary, but there is enough agreement to suggest a common literary source. The version reproduced here seems to deal with oceans in the cosmic, not the geographical sense: The earth and its oceans are clearly marked off from those mentioned here by name. But the geographers apparently remained under the influence of such conceptions when they gained more information about the terrestrial oceans and as a result applied the old names to them. Thus D.M. DUNLOP, in his article on *"Baḥr"* in *EI*[2] (I, 926 f.) states:

> ... it is convenient to note here that in Islamic cosmology, on the basis of a conception generally related on the authority of Kaᶜb al-Aḥbār, the mountain Ḳāf, which encircles the terrestrial sphere, is itself surrounded by seven concentric intercommunicating seas; these seas bear respectively the following names: Nīṭas (or Bayṭas͟h), Ḳaynas (or Ḳubays), al-Aṣamm, al-Sākin, al-Mug͟hallib (or al-Muẓlim), al-Mu'annis (or Marmās) and finally al-Bāḳī. But it is probable that these names correspond to geographical realities; in fact Nīṭas (and its variant form) is an orthographic corruption of Bunṭus (= *pontos* = the Black Sea); and Ḳaynas (and its variant) derives from Uḳiyānūs (= *ōkeanos* = the ((Atlantic)) Ocean)...

Such derivations hardly prove anything concerning the actual historical origin of the geographical notions. For *ōkeanos* itself seems to be derived from the Sanscrit *ā-çáyānas*, meaning "bordering on", "lying around" (MENGE-GUETHLING: *Enzyklopädisches Wörterbuch*). The case seems to be similar as far as the first-mentioned sea is concerned. Although the name Nīṭas already occurs in early Arabic treatises, it is commonly explained as a misspelling of Bunṭus (= the Black Sea) by the later interpreters; but even in Greek *pontos* retains the general meaning of "sea" and is applied to the Black Sea by limitation only. Obviously "corrections" and "explanations" can "simplify" ancient texts considerably! See for instance C. PELLAT's interesting note *Bunṭus* in his edition of *Le Kitāb at-Tarbīᶜ*, where he writes on page 9:

> Le texte portait Nīṭas, corrigé en Bunṭus par Sandūbī; il s'agit en effet d'un *taḥrīf* provenant du caractère livresque des notions de géographie chez les Arabes et perpétué par les divers auteurs avec l'aide des copistes; on retrouve Nīṭas chez bon nombre d'écrivains, notamment Masᶜūdī, I,204, 260, 261, II,15; Ibn Ḫaldūn, *Prolég.* 1,94 (Nīṭaš); mais correctement *Ponṭus* dans Bīrūnī, India, 129. Ce mot désigne la Mer Noire = Pont-Euxin = *Pōntus*.

Islam (Buḫārī: *Tauḥīd* 37, 19, 24; *Anbiyā'* 3; *Tafsīr* S. 2,1; 17,5; *Riqāq* 51. — Muslim: *Īmān* 322, 327; *Qadr* 15. — Tirmiḏī: *Qiyāma* 10; *Qadr* 2; — Ibn Māǧa: *Zuhd* 37. — Aḥmad b. Ḥanbal: *Musnad* 2,435).

I,7: The Dual eulogy after the name of Ibn ʿAbbās is customary because it is implicitly used for father and son (the "ibn" still denoting the relationship). The comparison with a "dome" in the desert seems to point to the form of the heavens rather than their magnitude. According to Lane "any round structure" is thus denoted (*Lexicon* VII, 2478).

I,8: The snake around the throne is possibly identical with the cosmic snake usually associated with Zervan Akaranan (the god of uncreated time) and is part of an ancient system of astrology (cf. R. Eisler: *Weltenmantel und Himmelszelt* II, 492 ff., especially p. 496). To some extent this would also explain why the snake is connected with the idea of a descending revelation: A cosmological foundation of astrology of a peculiar kind. Originally, however, this picture of the world may stem from the Babylonian cosmology that found its expression in the construction of the Ziqqurat-temples.

I,9: The flight of the angel without making progress seems to be a literary device to emphasize God's infinity and ubiquity. Al-Qazwīnī has a similar story about the angel Michael trying to fly around God's throne, with God's power and permission. But after 12,000 years of flying he had covered only a very small distance (*K. ʿAǧā'ib al-maḫlūqāt* I, 54). Further, there is a tradition about four angels coming from the four directions: Each one of them could say that he had come directly from God (J. van Ess: Review of G. Vitestam, *K. ar-Radd* 382).

I,10: Cf. above I,5.

I,11: Sūra 52,5. — The notion of a celestial ocean was apparently also shared by the early Arab astronomer al-Fazārī who reportedly said of the sphere: "The sphere, revolving in its course for the greatest of affairs, moves in one of the seas." (from D. Pingree: *"The Fragments of the Works of Al-Fazārī"* 104).

I,12: Sūra 52,5.

I,13: The lamp pictured here probably has domelike shades. Perhaps there is an allusion here to the famous light-verse: Sūra 24,34.

I,14: The reference seems to be to a book of "the prophet Hārūn"; but nothing is known about such a book. This may well be the oldest version, explicitly identified as stemming from the Jewish apocryphical

EISLER: *Weltenmantel und Himmelszelt* II, 480 ff.). Concerning the four rivers see also below XIII, 1.

The throne with all its tongues is clearly the archetype of the whole of creation. To praise God is its central function. Cf. H. HALM: *Kosmologie und Heilslehre* 43.

I,4: The red hyacinth must have been considered the most precious substance fitting for the throne (cf. A. WÜNSCHE: *Salomos Thron* 12 f.). According to a private communication from Dr. A. Schimmel, in Ṣūfī texts, too, this is always the most precious stone.

I,5: In his *Exégèse Coranique* P. NWYIA suggests the simplest explanation of the comparison: "... aussi minuscules qu'un anneau perdu dans le désert" (p. 69). But there is no indication — except the circularity of ring and desert horizon perhaps — why this lost and minute object has to be a ring, and not for example a needle. It is more likely that the comparison is made to a circle drawn in the sand. Actually, the ancient Babylonians used this symbol as a representation of the universe or infinity, as we learn from O. NEUGEBAUER's *Vorlesungen über Geschichte der Antiken Mathematischen Wissenschaften* I, 97:

> Die nächste und ursprünglich letzte Stufe dieses alten Systems bildet ein Zeichen, das durch einen großen kreisförmigen Eindruck hervorgebracht worden ist und das *šár* heißt und soviel wie 3600 bedeutet. Sowohl aus der Wortbedeutung wie aus dem keilschriftlichen Äquivalent... folgt, daß es sich nicht etwa um ein vergrößertes Zehnerzeichen handelt, sondern um die Zeichnung eines Kreises. Es ist dies eine jener Zahlbezeichnungen, die ursprünglich eine unbegrenzte Vielheit als solche und keinen präzisen Zahlbegriff bedeutet. 'Kreis' ist hier soviel wie 'Weltkreis', 'All' ... Note 1: Analog bedeutet akkadisch *lîmu* ('1000') 'Runde', 'Kreis'.

As a quote in AN-NUWAYRĪ's *Nihāyat al-Arab* (I, 32.4 f.) shows, this fragment may have been borrowed from ABŪ ḤĀTIM AS-SIĞISTĀNĪ's *Kitāb al-ᶜaẓama* (this scholar died in 250 H./864 A.D.).

I,6: What is envisaged here is probably not the problem of a *creatio ex nihilo* underscored by the difference between a creation by the creative command only, and one by God's hand. It is rather the hierarchy of the created beings. That Adam is mentioned in first place should guarantee the highest appreciation for human nature, in a way, a Teilhardian perspective of man's position in the universe. Such discussions on Adam's preeminence as a creature are already reported from Biblical and Rabbinic times and have found a place in the canonical traditions of

Ich bin das Tüpfelchen unter dem Buchstaben Bā, ich bin an der Seite Gottes, ich bin die Feder, ich bin die wohlbewahrte Tafel, ich bin der Gottesthron, ich bin die sieben Himmel und die sieben Erden. (from: al-Munāwī, fol. 18b quoted in: I. GOLDZIHER: *Muhammedanische Studien* II, 288 f.)

Of greater significance for the place of cosmology or astronomy in Islamic culture than these identifications is the fact that throne and footstool bring the cosmic structures and phenomena into the inner sphere of religion. The controversy against the Ǧahmīya sect, which was discussed above (pp. 57 ff.), is the first attested instance from the theoretical, theological point of view. The dispute about the reality of throne and footstool indicates that the struggle was less against an anthropomorphic than against a cosmological conception of God in the world. Such a contrast was already observed by Herodotus when he wrote of the Persians:

The following are certain Persian customs which I can describe from personal knowledge. The erection of statues, temples, and altars is not an accepted practice amongst them, and anyone who does such a thing is considered a fool, because, presumably, the Persian religion is not anthropomorphic like the Greek. Zeus, in their system, is the whole circle of the heavens, and they sacrifice to him from the tops of mountains. They also worship the sun, moon, and earth, fire, water, and winds, which are their only original deities, (HERODOTUS: *The Histories* 96. — Cf. B.L. VAN DER WAERDEN: *Die Anfänge der Astronomie* 212).

In early Ismāʿīlī literature, too, throne and footstool link God to His creation. See H. HALM: *Kosmologie und Heilslehre* 38.

I,1: Sūra 9,129. — Cf. Psalm 29,10.

I,2: Sūra 2,255. — Note that "earth" here is in the singular.

I,3: That God created His throne out of His light seems to be an idea inherited from the Manicheans (cf. H. JONAS: *The Gnostic Religion* 210 ff. and p. 98: "*Sh'kina*").

"All the water": Probably all the heavens are meant, because they are later described as suspended water (I,11). The four rivers around the throne are probably the remnants of an ancient fourpartite division of the sky or at least the region adjacent to what was believed to be the throne. The angels standing in these rivers would then be represented by the stars situated in the four zones. The order of the four may correspond to successive stages of light emanation. That is perhaps the main difference between them and the four celestial rivers of the Orphics (cf. R.

And I have kept aloof from what the astrologers say; for in it is badness of intention (ibid. 40.13). (Cf. FAḪR AD-DĪN AR-RĀZĪ's statement: "In truth, there is no way to the knowledge of the heavens save through a traditional report *(bil-ḫabar)*". In: *Mafātīḥ al-ġayb* VI, 149).

I. *Throne and footstool:* These two notions may seem to us to be purely theological or mythological, but in this treatise they definitely have a cosmic entity. When Greek science was introduced into the Islamic world, the two were often identified with the ninth and eighth sphere respectively. See for instance MUṬAHHAR B. ṬĀHIR AL-MAQDISĪ's *Kitāb al-bad' wa t-ta'rīḫ*: "... le trône, qui veut dire pour eux le ciel fixe contenant les sphères célestes..." (I, 155). Or: "... le korsî, qui est le ciel des constellations pour certains d'entre eux..." (ibid., 156). The same identification is found in such an influential theological book as ĪǦĪ's (d. 756 H./1356 A.D.) *Mawāqif* (VII, 79). But AL-QAZWĪNĪ, in his *Kitāb ᶜAǧā'ib al-maḫlūqāt* (I, 54), is much more cautious and leaves it to God's knowledge whether this identification can be made, although he does not doubt the existence of throne and footstool.

As a matter of fact, such identifications involving these two notions, or at least one of them, seem to have been fairly common in contemporary Arabic literature. See for instance the following texts:

> Quant au *Korsî* (siège), c'est un être créé, comme le trône. On nous rapporte qu'El-Ḥasan aurait dit: Le *korsî* est la même chose que l'ᶜ*arch*. Une légende qui m'est parvenue prétend que le *korsî* est placé devant le trône comme une perle dans le désert; les sept cieux, les sept terres et ce qu'elles renferment sont à côté du *korsî* comme une maille de la cotte de mailles, sur un vaste terrain. Il y a beaucoup de Musulmans qui croient que l'expression *korsî* désigne la science, à cause de ce passage du Qor'ān: «Son *korsî* est aussi large que les cieux et la terre» (S. 2,256), c'est-à-dire, d'après eux, que la science de Dieu les embrasse ainsi que ce qu'ils contiennent; *kérâsî*, au pluriel, ce sont les savants; et ils récitent à ce propos un vers: Les hommes au blanc visage les entourent, ainsi que la troupe des sièges (des savants) lorsque les événements changent. — Les traditionnistes rapportent que le *korsî* ou tabouret est l'endroit où l'on pose les deux pieds (quand on est assis sur un trône). Dieu sait mieux la vraie explication, parce que notre doctrine consiste à admettre les choses que notre science est impuissante à atteindre. (C. HUART: *Le Livre de la Création* I, 154 f.).

ᶜAlī, too, is sometimes identified with these notions:

ra'y is the same and worse. The upholders of *ra'y* and *qiyās* in religion are heretical and in error, except where there is an *athar* from any of the earlier reliable imams" (W. M. WATT: *The Formative Period* 294).

As I mentioned above in the historical analysis (especially pp. 24 ff.), al-Ḫaṭīb al-Baġdādī — with reference to the science of the stars — evaluates the views of Muḥammad's followers and the later Muslim scholars in the same manner. The scholarly activities and teachings of these men, therefore, seem to constitute the *āṯār* to which as-Suyūṭī refers as his sources. An examination of the fragments he has collected confirms that few of them claim to be statements of the Prophet himself. Thus they indeed may preserve the earliest cosmological theories of the Muslims, resulting from rational efforts, not simply a non-Qur'ānic revelation, as in the case of the *aḥadīṯ*.

0,7: *Al-Aḫbār:* Similarly with regard to *al-aḫbār:* LANE (*Lexicon* II, 696) states that it sometimes is distinguished from *ḥadīṯ* and *aṯar* in that it denotes "what comes from another than the Prophet"; or: "from him or another". *Ḥadīṯ*, then, is restricted to "what comes from the Prophet". And *aṯar* denotes "what comes from a Companion of the Prophet". — Hence as-Suyūṭī probably is less concerned with God's revealed, and therefore absolutely true, cosmology, but rather with the orthopraxy of the Muslims. Thus his treatise is not truly comparable with COSMAS INDICOPLEUSTES' *Topographie chrétienne*, the sixth century-attempt to compose a fully reliable cosmology or cosmography on the basis of biblical revelation (cf. W. WOLSKA: *La Topographie chrétienne*). Nor is it equivalent to the cosmological positions taken, e.g. by Galileo's opponents.

0,8: *The two groups:* The first part of the sentence is probably an allusion to Sūra 20,54, the second to Sūra 3,13 or Sūra 24,44 or Sūra 59,2. But it cannot be excluded either that it is a genuine appeal to logical reasoning and the control of observation (cf. A.I. SABRA: *"The Astronomical Origin")*. — The appeal to reason is not so unusual as it may seem; astronomical theories were rejected precisely because they were said to lack the support of sound proofs, as a text of AN-NUWAYRĪ (d. 733 H./ 1332 A.D.) shows:

> There is much said about the form of heaven, on the basis of the astronomical schools. But we dispense with that; for it is not supported by a definite proof. So we restrict ourselves to the presentation of that which is transmitted, with the exclusion of that which is arrived at by reasoning *(Nihāyat al-Arab* I, 32.11).

creations and mixed with newly acquired materials. The *hay'a as-sunnīya,* consequently, must be interpreted with the care of the historian for the ever-changing phenomenon.

0,4: *The chapters:* The choice of these topics does not really reflect as-Suyūṭī's personal world view, but seems to be determined by the tradition of Arabic cosmological writings up to that time (cf. e.g. the writings of al-Masᶜūdī, Muṭahhar b. Ṭāhir al-Maqdisī, al-Qazwīnī, etc.). Most chapter headings are lifted from Abū š-Šayḫ's *Kitāb al-ʿaẓama,* including "the Hours" in chapter V, although the compiler does not include materials about them. But he betrays certain predilections, for instance, he devotes much space to the Nile. No wonder, he grew up in Egypt.

0,5: *Praise:* Probably a line alluding to Sūra 96,5.

0,6: *Al-Āṯār:* This term is of considerable importance for a correct understanding of as-Suyūṭī's attitude to his sources, and further of the role the *hay'a as-sunnīya* played in Muslim intellectual history. I Goldziher, the greatest authority in this field, simply translates *aṯar,* pl. *āṯār,* literally as "trace", and in technical usage as "a tradition". He seems to leave it open how this term is distinguished from *ḥadīṯ,* which also could be straightforwardly translated as "a tradition" (in *EI*[2] I, 736). J. van Ess, however, sharply distinguishes between a traditional saying derived from the Prophet himself and one that was originally formulated by one of his followers (see his book *Zwischen Ḥadīṯ und Theologie;* especially pp. 17 and 99 ff.). And W.M. Watt, discussing Aḥmad b. Ḥanbal's *ᶜAqīda* I, considers it likely that the *āṯār* are derived from "the recognized outstanding scholars of later generations", namely as "stories about Muslims other than Muḥammad" (*The Formative Period* 295). The passage referred to is so significant for a correct appreciation of the claims attached to the *hay'a as-sunnīya* that it should be quoted:

> 16) Religion is only the book of God, the *āthār* (sayings or acts of pious men), the *sunan* (standard practices), and sound narratives from reliable men about recognized sound valid Traditions *(akhbār),* confirming one another... until that ends with the Messenger of God and his Companions and the Followers and the Followers of the Followers, and after them the recognized imams (sc. scholars) who are taken as exemplars, who hold to the Sunna and keep to the *āthār,* who do not recognize heresy and are not accused of falsehood or of divergence (from one another). They are not upholders of *qiyās* (analogical reasoning) and *ra'y,* for *qiyās* in religion is worthless, and

relied on older books, e.g. Abū l-Ǧald. This fact invalidates another possible interpretation of *sunnīya,* namely that it means "authenticated, warranted as true because of a revelation". That seems to have been C. Snouck Hurgronje's interpretation, who wrote; "All the intellectual achievements which fell into the lap of Islam as a result of its conquest of the world, were clothed in the sacred uniform of *ḥadīṯ*, and developed further as the *sunna* of the Prophet." *(Selected Works* 50 f.). Aš-Šahrastānī uses the term *šarᶜīya* in a similar manner and discusses the value of the ideas, the traditional teachings (in his book *Al-hay'a wa l-Islām).* But the truth-value, namely as revealed or not, cannot have been decisive for as-Suyūṭī.

MM. Bravmann's meticulous analysis of the term *'Sunna'* (in: *The Spiritual Background* 123 ff.) leads to a more satisfactory interpretation: As-Suyūṭī probably characterized his *Hay'a* as dealing with the *hay'a as-sunnīya* to show which cosmological investigations and explanations were already employed by the early pillars of the Muslim community. Whence they got these ideas, whether resulting from thought and observation, or whether the latter agree with further observations and reflections, is apparently of secondary importance. It does not matter whether a theory historically originated in pre-Islamic Arabia, Egypt, Mesopotamia, India or Greece — what makes them *sunnīya* is the fact that the shapers of opinion in the Muslim community turned to such objects of observation and reflection, or used certain methods. Whether for this reason the teachings were regarded as absolutely and finally true is a different question, possibly only a preconception in the mind of the modern reader. Conceivably the investigations and teachings of the respected forefathers were treated merely as precedences, in a way as examples, not as fixed positions or tenets, that did not allow further elaboration nor replacement with better ones.

Not surprisingly (because all activities of the Muslim community are governed by the *Šarīᶜa*) the intellectual situation closely resembles that of jurisprudence. The same factors that ruled the larger frame-work of the Muslim community, therefore, also influenced the development of the scientific endeavour. For this very reason as-Suyūṭī's use of the term *sunnīya* in connection with *hay'a* is most likely affected by the same rigidity he betrays in legal and religious discussions. His attitude, however, cannot be generalized against the particularism of historical processes: The *hay'a as-sunnīya,* a cold weapon in the hands of an as-Suyūṭī, may have been a pliable instrument in the hands of a creative scientist, or even the fluid metal that still could be moulded into new

It is all the more surprising that as-Suyūṭī uses this term in the title of his treatise. He does so quite intentionally; for in his brief introduction he emphasizes that he himself gave it that title. It was not merely ascribed to it by a later copyist, nor was it the fortuitous association of a librarian. Guided by the contents of the treatise a librarian probably would have chosen a title that would have classified it as a work on Ḥadīṯ or as a work of the *ʿAǧā'ib al-maḫlūqāt*-literature.

As-Suyūṭī's title, therefore, does not testify to *hay'a* having a wider meaning; it is like a programme, a battle-cry, or the personal claim to having contributed also to this science which by then was clearly circumscribed by the term *hay'a*. The review of his sources shows that materials transmitted by his trusted traditionists were accepted only partly by the compiler, apparently under the influence of what was commonly denoted by the term *hay'a*. In this way he gave them a meaning they previously did not have. In other words, this is an instance of unacknowledged (and perhaps unconscious) interaction between two groups of scholars supposedly divided by a wide gap, a step towards a higher degree of synthesis. And that in the work of an as-Suyūṭī. But is it more than the synthesis of two by then already life-less traditions? Cf. C. SNOUCK HURGRONJE, in: *Selected Works* 50 f.

I have translated *hay'a* as "cosmography" rather than "astronomy", because the former term seems wide enough to cover this treatise, while the latter is not.

0,2: *As-sanīya:* This adjective, setting off as-Suyūṭī's *Hay'a* from others, apparently was chosen only in order to rhyme with *sunnīya*. Like his contemporaries, the author was obviously fond of such rhyming titles (cf. E.M. SARTAIN: *Jalāl al-Dīn al-Suyūṭī,* I: the works).

0,3: *Al-hay'a as-sunnīya*: This is the most important part of the title defining the subject matter of the treatise. But in characterizing it as *sunnīya*, the author has chosen a rather multivocal term. First, it could be understood in the material sense as: The traditional reports as sole sources of information. But that poses two problems: Wherever possible, the compiler starts quotations with relevant verses from the Qur'ān — hence he does not maintain the clear distinction between the Qur'ānic revelations and the Sunna of the Prophet. Secondly, most of the quoted statements are not derived from the Prophet, or one of his followers who might be said to have been at least indirectly in contact with the receiver of revelation. They are frankly presented as independent theories of the later Qur'ān-commentators, or as informations they received from other scholars who

PART C
COMMENTARY ON THE TEXT OF *AL-HAY'A AS-SANĪYA*

0,1: *Hay'a,* in the title, obviously has a double meaning: First, it denotes this particular treatise (*Al-hay'a as-sanīya*), and then it describes its subject matter (*al-hay'a as-sunnīya*). As title *hay'a* is not unusual at this time, other contemporary authors employ it, too, e.g. Mu'ayyid ad-Dīn al-ᶜUrḍī, who worked with Naṣīr ad-Dīn aṭ-Ṭūsī (d. 672 H./1274 A.D.) in Marāġa, al-Ǧūzǧānī (d. 681 H./1282.3 A.D.) and al-Ǧaġmīnī (d. 745 H./1344.5 A.D.). But in view of the contents of this treatise, its preference for traditional teachings, it strikes a peculiar note.

Hay'a, in the unspecified meaning of "form", already occurs in the Qur'ān (Sūra 3,49 and 5,11). In scientific circles the term acquired the technical meaning of "astronomy", perhaps through assimilation to the Greek term *kosmos* in the vogue of the translation literature. The terminology seems to have developed by the intermediate stages of *ᶜilm hay'at al-ᶜālam* (= the science of the form of the world) and *ᶜilm hay'at al-aflāk* (= the science of the form of the spheres) to *ᶜilm al-hay'a* (= the science of astronomy). Cf. C.A. NALLINO: *Raccolta* V, 103. — *ᶜIlm al-Falak* 19. According to D. PINGREE's article on *ᶜIlm al-Hay'a*, in *EI²*, the term would seem to be used for:

> that branch of knowledge which deals with the geometrical structure of the universe, which determines the laws governing the periodic motions of the celestial bodies, which devises cinematic models to describe these motions, which reduces them to tabular form so that a computer can, with as much precision and ease as possible, determine the positions of the heavenly bodies as seen from any particular locality on the surface of the earth, and which invents and employs the instruments necessary to guarantee the utmost accuracy in observations. (p. 1135).

Hence the term *hay'a* appears to cover the purely scientific and mathematical side of the astronomer's work.

Conclusion

Aṭ-Ṭabarānī quotes Muslim al-Hiǧrī as narrating: "I addressed ᶜAbdallāh b. ᶜAmr thus: 'From what is creation made?' He replied: 'From water, wind, light, and darkness.' — Then I came to Ibn ᶜAbbās (may God grant them both His favour!) and I asked him about that matter. He answered: 'In this matter it is as ᶜAbdallāh b. ᶜAmr has said (may God grant them His favour!). And God knows better!'"

This is what has come down to us of *The Radiant Cosmography* containing the cosmography of tradition.

of this Nile.' — He replied: 'I, too, was led here by the same (goal) as you, until I finally reached this place. Then God revealed to me that I should stay here till His command would bring you (here).'

Ḥā'id asked him: 'Tell me, what ultimately did you come to know in the matter of this Nile? And did it ever become evident to you from the books that someone of Adam's descendants would reach it?' — He responded: 'Yes! I came to know that a man from the Banū l-ᶜAyṣ would reach it. And I do not believe him to be another than you.' — He said: 'How is the way to it?' — He replied: 'Travel, as you have done, on this sea. Then you will come to an animal the front part of which you can see, but not the back side. But as far as that is concerned, it should not terrify you. This animal is a foe of the Sun: When he rises, it pounces upon him to devour him. And when he sets, it pounces upon him in the same fashion.'

'Mount on it; it will carry you to the (other) side of the sea. Travel on there, and you will come to a land of iron. If you traverse it you arrive in a land of copper. If you traverse that you come to a land of silver. And if you traverse that you arrive in a land of gold. In that land, finally, you will obtain the knowledge of the Nile.' So he travelled until he reached the land of gold. And he travelled in it until he came to a wall of gold. Its pinnacle was of gold and its cupola was of gold. It had four doors. He looked at water coming down from the top of that wall until it would settle in the cupola. Then it was flowing off into the four doors: Three were discharging it into the earth, while one was emitting it on the surface of the earth. That was the Nile. He drank from it and rested. And he rushed towards the wall to climb up. But an angel came to him and told him: 'Oh Ḥā'id, stop where you are! You already have obtained the knowledge of this Nile and this paradise; for, indeed, it flows down from paradise.'"

5. Ibn Abī Ḥātim cites the following tradition from ᶜAbdallāh b. ᶜAmr (may God grant them both His favour!): "The Nile of Egypt is the lord of the rivers. God has made every river subservient to it, from the East to the West. When God, the Exalted, wishes that the Nile of Egypt flows, He orders every river to enlarge it. Then the rivers enlarge it with their water. And for its sake God causes the earth to stream, namely through its sources. — When its flowing has reached as far as God wanted it to reach, He communicates His inspiration to every water. So it returns to its origin."

The Thirteenth Chapter

What is mentioned concerning the Nile

1. The Imām Aḥmad and al-Ḥākim, who qualifies it as sound, cite the following tradition from Anas: "God's messenger (may God's blessing and peace be with him!) said: 'I was lifted up to the lotus-tree in the seventh heaven. And I saw that from its stem issued forth two exterior and two hidden streams. I said: Oh Ǧibra'īl, what is this? He replied: As for the two hidden ones, they are in paradise; and as for the exterior ones, they are the Nile and the Euphrates.'"

2. Muslim quotes Abū Hurayra (may God show him His pleasure!) as narrating: "God's messenger (God's blessing and peace be with him!) said: 'The Sayḥān, the Ǧayḥān, the Euphrates, and the Nile, they all belong to the rivers of paradise."

3. Al-Ḥāriṯ b. Abī Usāma, in his *Musnad,* and al-Bayhaqī, in *Al-baᶜṯ*, mention the following statement of Kaᶜb: "The river Nile is the river of honey in paradise; the river Tigris corresponds to the river of milk in paradise; the river Euphrates to the river of wine in paradise; and the river Sayḥān is the river of water in paradise."

4. Abū š-Šayḫ, in *Al-ᶜaẓama*, cites the following tradition from al-Layṯ b. Saᶜd: "I was told that there was a man from the Banū l-ᶜAyṣ whose name was Ḥā'id b. Abū Šālūm b. al-ᶜAyṣ b. Isḥāq b. Ibrāhīm (on him be peace!). He fled from one of their kings and finally entered the land of Egypt; and he made his abode in it. When he saw the wonders of its Nile, God determined for him not to leave its bank, until he would reach its farthest point, whether he would come out (alive) or die. So he travelled on it, as some have it, for thirty years among human beings and for yet another thirty years among non-humans. As others say, fifteen of this or that and fifteen of this or that, until he finally came to a green sea. He looked at the Nile that was dividing as it came nearer.

And lo, there was a man standing (there), praying under an apple tree. When he saw him he became friendly to him, he greeted him and said: 'Who are you?' — He replied: 'I am Ḥā'id b. Abī Šālūm b. al-ᶜAyṣ. But who are you?' — He answered: 'I am 'Imrān, son of so and so, Ibn al-ᶜAyṣ. So, what brings you here, Ḥā'id?' — He said: 'I came for the sake

9. In *Al-muṣannaf*, Ibn Abī Šayba transmits the following tradition from ᶜAbdallāh b. ᶜAmr (may God grant them both His favour!): "The water of the sea does not run at the ritual washing nor the (bath of the) great impurity. — Verily, under the earth there is fire, then water, then fire."

The Twelfth Chapter

What is mentioned concerning the seas

1. Abū š-Šayḫ cites the following tradition from Ibn ʿAbbās (may God grant them both His favour!): "As to this creation, it is surrounded by a sea." — Someone asked: "And what is behind the sea?" — He said: "Air." — Again: "And what is behind the air?" — He replied: "A sea that surrounds this air, and the sea that enters into seven seas, and the eighth." — Finally, the question was raised: "And what is behind the eighth?" — He responded: "There the matter comes to an end."

2. From Wahb he has this saying: "There are seven seas and seven earths. And the earth rests on the back of the fish. The name of the fish is *Bahamūt*."

3. And he quotes Ḥassān b. ʿAṭīya as saying: "I was instructed that the extension of the earth is 500 years. Of that its seas cover a distance of 300 years, the deserted area extends over 100 years, and the cultivated lands measure 100 years."

4. Abū š-Šayḫ hands down the following tradition from Ibn ʿAbbās: "Someone inquired about the flow and the ebb. He said: 'Truly, God has an angel who is in charge of the ocean. When he puts in his foot, it overflows; and when he raises it, it goes down. That is the flow and the ebb.'"

5. According to Abū š-Šayḫ, Abū ʿAmr stated: "Under this your sea there is a sea of fire. Under that sea there is a sea of water. And under that sea there is a sea of fire; (and so forth) until he had numbered seven seas of fire and seven seas of water."

6. Ibn Abī Ḥātim quotes Sufyān as saying: "I was instructed that the sea comes forth from a water-skin."

7. Ibn Abī Ḥātim cites this statement of ʿAbdallāh b. ʿAmr (may God grant them both His favour!): "I was instructed that the sea is a water-skin in the hand of an angel. If the angel were to treat it carelessly, it would clash against the earth."

8. And Ibn Abī Ḥātim mentions this saying of Kaʿb al-Aḥbār (may God grant him His favour!): "The sea exceeds the earth only by the holding rope of a bull."

The Eleventh Chapter

What is mentioned concerning the mountains

1. Abū š-Šayḫ quotes ᶜAbdallāh b. Yazīd as saying: "*Qāf* is a mountain surrounding the earth; it consists of an emerald on which the sides of heaven rest."

2. Ibn Abī Ḥātim and Abū š-Šayḫ cite this explanation of Kaᶜb concerning God's word 'Until it (i.e. the Sun) had disappeared behind the veil': "The veil is a green mountain consisting of a hyacinth; it surrounds the creatures, and from it originates the green colour of the sky, which is called *Al-Ḫaḍrā'* (= the Green). The green colour of the sea comes from the sky; therefore it is called *Al-Baḥr al-Aḫḍar* (= the green sea)."

3. According to Abū š-Šayḫ, Ibn ᶜAbbās stated: "The sea is placed on a green rock. So, what you see of the green colour of the sky, that comes from the greenness of that rock."

4. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following tradition from Anas: "God's messenger (God's blessing and peace be with him!) said: When God created the earth it was made plane. Then He created the mountains and placed them on it; as a result, it became stable. The angels marvelled at the creation of the mountains and said: "Oh Lord, in your creation, is there anything stronger than the mountains?" — He responded: "Iron!" — They asked further: "Oh Lord, and is there anything in your creation stronger than iron?" — He replied: "Yes, fire!" — They went on: "And is there anything in your creation stronger than fire?" — He said: "Yes, water!" — And again: "Oh Lord, and is there anything in your creation stronger than water?" — He answered: "Yes, the wind!" — Finally, they inquired: "Oh Lord, and is there anything in your creation stronger than the wind?" — He said: "Yes, man — giving alms with his right hand while it is hidden from his left." "

5. Ibn Abī Ḥātim quotes ᶜAṭā' as saying: "The first mountain that was set on earth was Abū Qubays."

6. And, according to Abū š-Šayḫ, Ibn ᶜAbbās said: "Truly, the mountains are quite proud on earth because it is firmly established through them."

The Tenth Chapter

What is mentioned concerning the earthquake

1. Abū š-Šayḫ and Ibn Abī d-Dunyā, in the book *Al-ʿuqūbāt*, cite the following tradition from Ibn ᶜAbbās (may God grant them both His favour!): "God created a mountain called *Qāf;* it surrounds the earth, and its roots reach down to the rock on which the earth is (established). When God Exalted and Most High wishes that a town has an earthquake, He gives His command to that mountain. As a consequence, it sets in motion the region around this town; that causes it to quake and to move. Then the town moves, but not the town (itself)."

2. Abū š-Šayḫ has a similar tradition from Wahb (may God grant him His favour!).

8. Saʿīd b. Manṣūr, in his *Sunna,* and al-Buḫārī, in *Al-adab al-mufrad* and with a sound chain of transmission, relate on the authority of Saʿīd b. Ǧubayr that Harqal wrote to Muʿāwiya b. Sufyān Ibn Ḥarb. He inquired about the Milky Way, the rainbow and the place where the Sun rose: It did not rise there before and not after that event. Muʿāwiya replied: "Whom do I have for this?" — And he was told: "Ibn ʿAbbās!" — So Muʿāwiya wrote to him for these questions. Ibn ʿAbbās (may God grant them both His favour!) wrote back to him: "As for the Milky Way, it is the gate of heaven through which it breathes. As for the rainbow, it is a security for the people of this world against drowning. And as for the place where the Sun rose, it is a place in the sea, at the time it was divided for the Israelites."

9. In *Al-ḥilya,* Abū Nuʿaym cites the following tradition from Ibn ʿAbbās: "The Prophet (God's blessing and peace be with him!) said: 'Do not say *Qausu Quzaḥa* (= rainbow); for *Quzaḥ* is Satan. Rather say: *Qaus Allāh.* It is a security for the people of this world."

10. In *Al-mustadrak* al-Ḥākim mentions this tradition from Ibn ʿAbbās, as going back to the Prophet (= *marfūʿan*): "The rainbow is a security for the people of this earth against drowning."

11. Isḥāq, from Bišr, Ibn ʿAsākir, through the intermediary of Ǧubayr, and Muqātil, from aḍ-Ḍaḥḥāk, from Ibn ʿAbbās (may God show them all His pleasure!) mention this tradition concerning God's word: 'And it was said: Oh Earth, swallow your water! Oh Heaven, desist!': "And the earth swallowed its water, and the water of heaven rose till it reached the clouds of heaven, in the hope of returning to its place. Then God revealed to it that it should retreat: 'For you are dirty and furious.' — So the water retreated, it became salty, smelling bad and fluctuating. And mankind suffered damage because of that. So God sent the wind; He gathered it in the places of the seas. Then it became clamorous and salty, and it could be used. — Noah (peace be on him!) looked out: And lo, the Sun had already risen and it appeared to him the hand from heaven. That was a certain sign between him and his Lord, a security against drowning. The hand was the bow which is called *Qausu Quzaḥa.* But it is prohibited to call it *Qausu Quzaḥa* because *Quzaḥ* is Satan, and this is God's bow. People believe that formerly there was a string and an arrow on it in the sky. But when God established it as security against drowning for the people of this earth, God removed string and arrow. And God knows better."

The Ninth Chapter

What is mentioned concerning the Milky Way and the Rainbow

1. Aṭ-Ṭabarānī and Abū š-Šayḫ, through an intermediary, mention the following tradition from Muᶜāḏ b. Ǧabal, from the Prophet (God's blessing and peace be with him!): "The Milky Way, which is in the sky, comes from the sweat of the viper which is under the throne."

2. Aṭ-Ṭabarānī quotes Ǧābir b. ᶜAbdallāh as saying: "God's messenger (God's blessing and peace be with him!) said: 'Oh Muᶜāḏ, I am sending you to some of the People of the Book. So, when you are asked about the Milky Way, which is in the sky, say that it is the saliva of the snake under the throne.' "

3. Abū š-Šayḫ quotes Ḫālid b. Ma'dān as saying: "The Milky Way, which is in the sky, comes from the sweat of the reptiles which support the throne."

4. Al-Buḫārī (may God grant him mercy!) in *Al-adab al-mufrad* and Abū š-Šayḫ, through intermediaries, cite the following saying of ᶜAlī b. Abī Ṭālib (may God grant him honour!): "The Milky Way, which is in the sky, is the same as the gates of heaven, through which God poured out the water gushing forth over the people of Noah (peace be with him!)."

5. On the basis of a sound chain of transmission, Abū š-Šayḫ hands down the following saying of Ibn ᶜAbbās (may God grant them both His favour!): "The Milky Way is the same as the gate of heaven through which it breathes."

6. And relying on another authority, he quotes Ibn ᶜAbbās as stating: "The Milky Way is the gate of heaven; its extremity is from here in the direction of *Ad-Dabūr* (i.e., the west wind), and from right to left."

7. Al-Buḫārī (may God grant him mercy!), in *Al-adab al-mufrad,* cites the following saying of Ibn ᶜAbbās (may God grant them both His favour!): "The Milky Way is one of the gates of heaven. As to the rainbow, it is the security against drowning after the people of Noah (on him be peace!)."

18. Ibn Abī Ḥātim quotes Abū Hurayra as stating: "Lightning is the colliding of hailstones."

19. According to Abū š-Šayḫ, Abū l-Ǧald said: "The sky consists of an enclosed wave. Lightning is the glitter of the water; and the thunderbolts are the lances with which the clouds are urged on."

20. The Imām Aḥmad, in *Az-zuhd,* Ibn Abī Ḥātim and Abū š-Šayḫ quote Abū ᶜImrān al-Ḥabūnī as saying: "We were instructed that under the throne there are oceans of fire from which the thunderbolts are falling down."

21. According to Abū š-Šayḫ, as-Suddī said: "The thunderbolts are fire."

22. And according to Ibn ᶜAsākir, Ka'b al-Aḥbār stated: "Thunder and lightning are about to emigrate to Syria, so that there will be no thunder nor lightning except between Al-ᶜArīsh and the Euphrates."

mention this saying of ᶜAlī b. Abī Ṭālib (may God grant him His favour!): "Lightning consists of lances of fire in the hands of the angels of the clouds; with them they urge on the clouds."

10. Ibn Abī d-Dunyā and Abū š-Šayḫ, through the intermediary of Ǧubayr, cite the following saying from aḍ-Ḍaḥḥāk, from Ibn ᶜAbbās (may God grant them both His favour!): "Thunder is an angel that makes its appearance in that way."

11. Ibn Mardawayh quotes the following tradition from ᶜAmr b. Buǧād al-Ašʿarī: "God's messenger (God's blessing and peace be with him!) said: 'With God the name of the clouds is *Al-ᶜAnān*. Thunder is an angel that urges on the clouds; and lightning is a glance of an angel who is called Rūfāʾīl.'"

12. Again, Ibn Mardawayh quotes Ǧābir b. ᶜAbdallāh: "God's messenger (God's blessing and peace be with him!) was asked about the origin of the clouds. So he said: 'Truly, an angel who is in charge of the clouds accumulates those that are far away and keeps together those that are extending. In his hand there is a lance. When it is raised, there is lightning; when he urges on, there is thunder; and when he deals out strokes, there are thunderbolts.'"

13. Al-Buḫārī in *Al-adab*, Ibn Abī d-Dunyā in *Al-maṭar* and Ibn Ǧarīr, through the intermediary of ᶜIkrima, cite the following saying of Ibn ᶜAbbās: "Thunder is an angel who calls the clouds, as the shepherd calls his sheep."

14. Ibn Ǧarīr and Ibn Mardawayh, through the intermediary of aḍ-Ḍaḥḥāk, hand down this saying from Ibn ᶜAbbās: "Thunder is one of the angels whose name is *Ar-Raᶜd*. It is his voice that you hear. And lightning is a whip of light with which that angel urges on the clouds."

15. Ibn al-Munḏir and Ibn Mardawayh, through the intermediary of Muǧāhid, transmit the following statement from Ibn ᶜAbbās: "Thunder is an angel whose name is *Ar-Raᶜd*, and this his voice is his act of praising God. When his urging of them becomes more intense, the clouds press against each other and collide for fear of him. Then thunderbolts issue from them."

16. Ibn Ǧarīr quotes Muǧāhid as saying: "Lightning is the agitation of an angel."

17. Ibn Abī Ḥātim cites the following tradition from Muḥammad b. Salama: "We were instructed that lightning is an angel who has four faces: The face of a man, the face of a bull, the face of an eagle, and the face of a lion. And when it flicks its tail, then that is lightning."

The Eighth Chapter

What is mentioned concerning thunder, lightning, and thunderbolts

1. God Most High said: "In it there is darkness, thunder, and lightning; they put their fingers into their ears against the thunderclaps."

2. Again, He said: "It is He who shows you the lightning."

3. Aḥmad, at-Tirmiḏī, an-Nasā'ī — declaring it sound — and Abū š-Šayḫ mention the following tradition from Ibn ᶜAbbās (may God grant them both His favour!): "The Jews said: 'Oh messenger of God, inform us about the thunder! What is it?' — He replied: 'One of the angels who is in charge of the clouds. With him he has lances of fire; with them he drives the clouds wherever God wants!' — They further inquired: 'So what is the voice which one can hear in it?' — He responded: 'The urging of the clouds, when he urges them on, so that they finally go where he tells them to go.' — They said: 'You have spoken the truth!' "

4. Ibn al-Munḏir and Abū š-Šayḫ, through the intermediary of Šahr b. Ḥaušab, cite this tradition from Ibn ᶜAbbās (may God grant them both His favour!): "Thunder is an angel that drives the clouds with the praise-formula; just as the camel drover drives the camels with his song."

5. And through the intermediary of Abū Mālik, Abū š-Šayḫ relates this saying of Ibn ᶜAbbās: "Thunder is an angel that urges on the clouds with the formula of praise and exaltation."

6. According to Abū š-Šayḫ, Šahr b. Ḥaušab said: "Thunder is an angel who is in charge of the clouds; he drives them, just as the camel drover drives his camels. So, when a cloud disobeys, he shouts at it. And when his anger grows more intense, some of the fire-brands in him are scattered around. Those are the thunderbolts which you see."

7. And he quotes as-Suddī as saying: "Thunder is an angel that drives the clouds and tells them how much rain he wants them to drop."

8. Ibn al-Munḏir and Abū š-Šayḫ cite this statement of aḍ-Ḍaḥḥāk: "Thunder is an angel called *Ar-Raᶜd*. His voice, one hears, is his act of praise."

9. Ibn Ǧarīr, Ibn Abī Ḥātim, Abū š-Šayḫ and al-Bayhaqī, in his ***Musnad,***

34. In the *Uṣūl as-sunna* Ibn Abī Zamīl cites the following tradition, with a chain of authorities, from Salmān al-Fārisī: "Under this heaven there is an ocean of water teeming with the animals the like of which are found in this your sea. With that ocean God flooded the people of Noah; and it is that which God has prepared as dwelling for the sake of punishment. He will bring it down before the Day of Resurrection; and God will flood with it whomsoever He wants."

35. Note. — According to Abū š-Šayḫ Qatāda said: "Ādam (on him be peace!) used to drink from the clouds."

25. Aš-Šāfiʿī in *Al-umm*, Ibn Abī d-Dunyā in *Al-maṭar*, and Abū š-Šayḫ cite this tradition from al-Muṭallib b. Ḫanṭab: "The Prophet (God's blessing and peace be with him!) said: 'There is no hour of night or day in which heaven does not bring rain, God directing it wheresoever He wishes.'"

26. Ibn Abī Ḥātim quotes Ibn Masʿūd (may God grant him His favour!) as saying: "There is no year more abounding in rain than another year; but God sends or directs it wheresoever He wishes."

27. And according to Abū š-Šayḫ al-Ḥasan said: "There is no year more abounding in rain than another year; but God directs it wherever He wishes. And with the rain He sends down such and such of the angels in order to note down where that rain falls, whom it provides with sustenance, and what results from it with every drop."

28. Ibn Abī d-Dunyā, in *Al-maṭar*, and Abū š-Šayḫ quote Ibn ʿAbbās as stating: "No rain falls from heaven, unless the seeds come down with it. So, if you spread out a mat of leather you would see it."

29. Ibn Abī d-Dunyā and Abū š-Šayḫ mention this saying of Ibn 'Abbās: "The rain receives its nature in paradise: So, when its nature is higher its blessing is greater, even though there may be less rain. And when its nature is lower its blessing is smaller, even though there may be plenty of rain."

30. Ibn Abī Ḥātim quotes this statement of Ḫālid b. Yazīd: "The rain is partly from heaven, and partly it is drawn from the sea by the clouds and made sweet by thunder and lightning. But that which comes from the sea does not produce vegetation. As for vegetation, it is produced by that (rain) which comes from heaven."

31. Abū š-Šayḫ cites this saying from Kaʿb, from Ibn ʿAbbās: "There is no spring flowing unless its origin is in ice."

32. Abū š-Šayḫ quotes Kaʿb as saying: "If the ice did not come down from the fourth heaven, it would not pass anything without destroying it."

33. Again, according to Abū š-Šayḫ, Abū Mālik al-Ġifārī narrated: "I asked Ibn ʿAbbās and said: 'One camps on desert land. Rain falls on it at night. And the following day morning comes up on that land — with green frogs!' — Ibn 'Abbās replied: 'Indeed, this lowest heaven up to the one that is next to it, and the interval between the two, is altogether water. In it there swim the animals the like of which live in this your sea.'"

measure; and not the proper amount of wind except with a measure. But not so on the day of Noah; for the water flowed over the dam.' — God Most High said: 'Verily, when the water overflowed, We bore you in the floating vessel.' — And on the day of ᶜĀd the wind pressed with indomitable force against the dam. God Most High said: 'By a wind roaring, violent.' "

17. Abū š-Šayḫ quotes Saᶜīd b. Ǧubayr as stating: "God does not send a drop down from heaven except with the knowledge of the keepers; but this was not so when the water overflowed. For it was furious because of God's wrath. So it overflowed the dam, and it came out of what people do not know what it is."

18. Abū š-Šayḫ also hands down this saying of Kaᶜb: "Rain is the consort of the earth."

19. Relying on the intermediary of Saᶜīd b. Ǧubayr, Abū š-Šayḫ cites the following statement of Ibn ᶜAbbās: "God creates the pearls in the pearl-oysters from the rain. The pearl-oysters open their mouths during the rain. So the big pearl is made from the big drop of rain; and the small pearl is made from the small drop of rain."

20. Ibn Abī Ḥātim and Abū š-Šayḫ quote this saying from ᶜIkrima: "God does not send a drop from heaven except that by it He lets grow a plant on earth or a pearl in the sea."

21. Abū š-Šayḫ cites the following statement from ᶜUbayd b. 'Amīr: "God sends a wind, and it sweeps the earth. Then He sends the second one, and it stirs up the clouds. And He causes them to be darkness. Then He sends the third one, and that brings them together and forms them into a cumulus cloud. Thereafter the fourth one, and that brings the rain."

22. Ibn Abī Ḥātim and Abū š-Šayḫ quote as-Suddī as stating: "God sends the wind, and it drives the clouds from East and West, the edge of heaven and earth, where the two meet; and He pushes them out. Then He spreads them out and unfolds them in the sky, as He wishes. Thereafter He opens the gates of heaven, and He lets the water flow on the clouds. Then, after that, He lets the clouds pour down the rain."

23. Abū š-Šayḫ hands down this tradition from Abū Umāma: "God's messenger (God's blessing and peace be with him!) said: 'No people receives rain except with a boon; and they are not left without rain except through a sin.' "

24. And Abū š-Šayḫ mentions the following tradition from al-Ḥasan: It was as he looked at the clouds that he said: "By God, in them is your sustenance, but you are deprived of it through your faults."

messenger (God's blessing and peace be with him!) say: 'God makes soar up the clouds, He produces the best speech, and He causes the best laughter.' — Ibrāhīm b. Saᶜd explained: 'The speech is the thunder, and the laughter is the lightning.'"

8. Abū š-Šayḫ relates that according to Abū l-Muṯannā the earth said: "Oh Lord, saturate me with water! But do not pour it down in an overflow, as you did pour it down on the people of the Flood!" — He responded: "I will make the clouds a sieve for you."

9. Abū š-Šayḫ quotes Ibn ᶜAbbās as teaching: "In the black cloud there is the rain, and in the white one there is the dew; and that is what ripens the fruits."

10. Abū š-Šayḫ mentions that ᶜĀ'iša (may God grant her His favour!) said: "I heard God's messenger (God's blessing and peace be with him!) teaching: 'When *Baḥrīya* rises, consider it as an omen: Namely springs or a year abundant with water, which means plenty of rain."

11. Abū š-Šayḫ mentions that according to al-Ḥasan the following inquiry was made: "Is the rain from heaven or from the clouds?" — He said: "From heaven! The clouds are only signs on which the water from heaven descends."

12. And he quotes Wahb as stating: "I do not know whether the rain is brought down in drops from heaven into the clouds, or whether it is created in the clouds and then poured down as rain."

13. Ibn Abī Ḥātim, Abū š-Šayḫ and al-Ḫarā'iṭī, in *Makārim al-aḫlāq*, cite the following statement from Ḫālid b. Maᶜdān: "The rain is water that comes forth from under the throne. Then it runs down from heaven to heaven, until it gathers in the lowest heaven. And it gathers in a place that is called *'Al-Abzam'*. Then the black clouds come along, and it enters into them. And they suck it up as the sponge does. Then God directs them wherever He wishes."

14. Ibn Abī Ḥātim and Abū š-Šayḫ quote ᶜIkrima as saying: "The water comes down from the seventh heaven; and the drops of it fall on the cloud like the dung."

15. Abū š-Šayḫ cites the following explanation of aš-Šaᶜbī concerning God's word 'And He has inserted springs into the earth': "All the water on earth comes down from heaven."

16. And Abū š-Šayḫ cites this statement of Ibn ᶜAbbās: "God's messenger (God's blessing and peace be with him!) declared: 'He does not send the proper amount of water down from heaven except with a

The Seventh Chapter

What is mentioned concerning the clouds and the rain

1. Ibn Abī Ḥātim and Abū š-Šayḫ quote ᶜAṭā' as saying: "The clouds come forth from the earth." Then he recited: "He sends the winds, so that they stir up clouds."

2. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following statement of Ibn ᶜAbbās (may God grant His favour to both of them!): "Truly, God sends the wind that carries the water from heaven. Then He casts it at the clouds, pouring it out as the seeds are poured out."

3. Aṭ-Ṭabarānī, in the *Ausaṭ,* cites the following tradition from ᶜAlī (may God honour him!), relying on a good chain of transmission: "The strongest part of your Lord's creation are the ten mountains. But iron hews the mountains. Fire consumes iron; water extinguishes fire. The clouds are made to serve between heaven and earth, namely to carry the water; and the wind moves the clouds. Man protects himself from the wind with his hand (only) and travels in it for the sake of his business. But intoxication overcomes man, and sleep conquers intoxication. Yet, grief prevents sleep. So, the strongest part of your Lord's creation is grief."

4. Abū š-Šayḫ mentions this explanation of Muǧāhid concerning God's words 'And the burden-bearers': "The clouds carry the rain."

5. Ibn Abī Ḥātim and Abū š-Šayḫ quote Kaᶜb as stating: "The clouds are the sieve of the rain. If there were no clouds when the water comes down from heaven, it would ruin that part of the earth on which it falls. With it also the seeds come down from heaven."

6. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following saying of Ḫālid b. Maᶜdān: "In paradise there is a tree that produces the clouds as fruits; the black ones are the fruits that are already ripe, those that carry the rain. The white ones are the fruits that have not yet ripened, those which do not carry the rain."

7. The Imām Aḥmad, Ibn Abī d-Dunyā in the book *Al-maṭar* and Abū š-Šayḫ mention the following tradition from al-Ǵifārī: "I heard God's

away, unless a river-bed carries water. Did you see it or did you not see it?"

22. He mentions this statement from Qays b. ᶜAbbād: "*Aš-Šamāl* is the salt of the earth. If there were no *Aš-Šamāl* the earth would putrefy."

23. ᶜAbdallāh b. Aḥmad, in the *Zawā'id az-zuhd,* and Abū š-Šayḫ cite this saying of Kaᶜb: "If the wind were withheld from mankind for three days, whatever there is between heaven and earth would putrefy."

24. Abū š-Šayḫ quotes ᶜUṯmān al-Aᶜrağ as stating: "The abodes of the winds are under the wings of the Cherubim, the bearers of the throne. Then they are set in motion, they throw themselves on the wheel of the Sun, and the angels are charged with its movement. Thereafter, they are moved away from the wheel of the Sun, and they throw themselves on the sea. Then they lift themselves off the sea and settle down on the peaks of the mountains. And then they move away from the peaks of the mountains and drop on the mainland. As to *Aš-Šamāl,* it passes through the garden of ᶜAden; so it acquires some of its fragrant scent. Then *Aš-Šamāl* proceeds towards its destination between the footstool of Ursa maior and the place where the Sun sets. *Ad-Dabūr* blows towards its destination between the place where the Sun sets and that where Canopus rises. *Al-Ğanūb* blows towards its destination between the place where Canopus rises and that where the Sun rises. And *Aṣ-Ṣabā* blows towards its destination between the place where the Sun rises and the footstool of Ursa maior. So the one does not enter the destination of the other one; and that one does not enter the destination of the other one."

25. Ibn Ğarīr, Ibn Abī Ḥātim, Ibn al-Munḏir and Abū š-Šayḫ cite this statement of ᶜUbayd b. ᶜAmīr: "God sends (the wind) *Al-Mubaššira,* and it sweeps the earth. Then He sends *Al-Muṯīra,* and it stirs up the clouds. Then He sends *Al-Mu'allifa,* and it brings them together. Then He sends the pollens, and they fructify the fruits." — Thereafter he recited: "And We send the winds as seeds."

26. Ibn Abī Ḥātim quotes ᶜAbdallāh b. al-Mubārak as saying: "Verily, the wind has a wing. And the Moon retreats into a covering of water."

b. Yūnus was asked after which thing the wind was named. He replied: 'After the *Qibla*: The one from its North is *Aš-Šamāl*, and the one from its South is *Al-Ğanūb*. *Aṣ-Ṣabā* is the one blowing from the region facing its front side, and *Ad-Dabūr* is the one blowing from the region that is behind it."

15. Ibn Abī Ḥātim and Abū š-Šayḫ cite this statement of Ḥamza b. Ḥabīb: "*Ad-Dabūr* is the west wind, *Al-Qabūl* is the east wind, *Aš-Šamāl* blows towards the South, *Al-Yamān* is the south wind, and *An-Nakbā'* blows from the four directions."

16. Abū š-Šayḫ quotes Ibn ᶜAbbās as saying: "*Aš-Šamāl* blows from the area between the pole-star and the place where the Sun rises. *Al-Ğanūb* blows from the area between the place where the Sun rises and where Canopus rises. *Aṣ-Ṣabā* blows from the area between the place where the Sun rises towards the pole-star. And *Ad-Dabūr* blows from the area between the place where the Sun sets towards Canopus."

17. Abū š-Šayḫ mentions that according to Anas God's messenger (God's blessing and peace be with him!) said: "*Al-Ğanūb* belongs to the wind of paradise."

18. Ibn Ğarīr and Ibn Mardawayh in their respective *Tafsīrs*, Ibn Abī d-Dunyā in the book *As-Saḥāb* and Abū š-Šayḫ in the book *Al-ᶜAẓama* cite this saying of Abū Hurayra: "I heard God's messenger (God's blessing and peace be with him!) say: 'The wind *Al-Ğanūb* comes from paradise. So it is the gift of pollens; and in it are benefits for mankind. *Aš-Šamāl* comes from hell and passes through paradise. So the breeze of paradise encounters it, and it cools down because of that.'"

19. Ibn Rāhūya and Ibn Abī Šayba in their respective *Musnads*, al-Buḫārī in his *Ta'rīḫ*, al-Bazzār and Abū š-Šayḫ mention that according to Abū Ḏarr (may God grant him His favour!) the Prophet (God's blessing and peace be with him!) said: "During seven years God created wind after wind in paradise in front of which there is a closed door. However, the spirit came to you through a cleft of that door. If that door were opened, whatever there is between heaven and earth would be dispersed. For God this is *Al-Azyab*, and for you it is *Al-Ğanūb*."

20. Abū š-Šayḫ quotes Ibn ᶜAbbās as saying: "*Al-Ğanūb* is the master of the winds; its name with God is *Al-Azyab*. In front of it there are seven doors. However, whatever came to you, came to you through a cleft in them (i.e. the doors). If one of those doors were opened, whatever there is between heaven and earth would be dispersed."

21. And again, he quotes this saying of Ibn ᶜAbbās: "*Ğanūb* never goes

second earth is the sterile wind. When God wanted to destroy the people of ʿĀd, He revealed to its keepers that they should open a gate for it. They said: 'Oh, our Lord! Like the nostril of the bull?' — He replied: 'If it is sufficient for the earth, as far as its inhabitants are concerned, open as much as the circle of the ring for it!' "

9. Ibn Abī Ḥātim quotes the following tradition from ʿAbdallāh b. ʿAmr (may God grant them both His favour!): "God's messenger (God's blessing and peace be with him!) said: 'The wind is locked in on the second earth. When God wanted to destroy the people of ʿAd, He ordered the keeper of the wind to send a wind against them, so as to destroy the people of ʿĀd. He said: Oh Lord, I will send as much wind as is measured by the nostril of the bull. — The Almighty told him: No! Because it would suffice for the (whole) earth and whatever is on it. Rather, send as much against them as is measured by a ring!' "

10. Abū ʿUbayd, Ibn Abī Ḥātim, Ibn al-Mundir, Ibn Abī d-Dunyā and Abū š-Šayḫ mention the following statement of Ibn ʿAmr: "There are eight winds; four of them are a boon, and four of them are a punishment. As to the boon, they are: *An-Nāširāt*, *Al-Mubašširāt*, *Al-Mursalāt* and *Aḏ-Ḏārīyāt*. And as to the punishment, they are *Al-ʿAqīm* and *Aṣ-Ṣarṣar* — these two being on the mainland — *Al-ʿĀṣif* and *Al-Qāṣif* — these two being on the ocean."

11. Abū š-Šayḫ cites a similar tradition from Ibn ʿAbbās, except that he says *Ar-Ruḫā'*, instead of *Aḏ-Ḏārīyāt*.

12. Abū š-Šayḫ quotes this saying from ʿIsā b. Yaḥyā al-Ḥayyāṭ: "We were instructed that there are seven winds: *Aṣ-Ṣabā*, *Ad-Dabūr*, *Al-Ǧanūb*, *Aš-Šamāl*, *An-Nakbā'*, *Al-Ḫarūq* and the wind *Al-Qā'im*. As to *Aṣ-Ṣabā*, it blows from the East; *Ad-Dabūr* from the West; *Al-Ǧanūb* from the left side of the *Qibla*; *Aš-Šamāl* from the right side of the *Qibla*; *An-Nakbā'* is between *Aṣ-Ṣabā* and *Al-Ǧanūb*; *Al-Ḫarūq* is between *Aš-Šamāl* and *Ad-Dabūr*; and the wind *Al-Qā'im* is the breathing of creation."

13. And he quotes this saying from al-Ḥasan: "The winds are determined in relation to the Kaʿba. So, when you want to ascertain this, lean your back against the door of the Kaʿba: Then *Aš-Šamāl* will blow from your left side, namely the side on which the stone is. *Al-Ǧanūb* will blow from your right side, where the black stone is. *Aṣ-Ṣabā* will be opposite you, in front of the door of the Kaʿba. And *Ad-Dabūr* will blow from behind the Kaʿba."

14. Ibn Abī Ḥātim quotes Ḥusayn b. ʿAlī al-Ǧaʿfī as narrating: "Isrā'īl

The Sixth Chapter

What is mentioned concerning the water and the winds

1. Abū š-Šayḫ, through the intermediary of Abū ʿIṣma Nūḥ b. Abī Maryam, who was a liar and inventor of traditions, cites the following statement from Muqātil b. Ḥayyān, who had it from aḍ-Ḍaḥḥāk, who had it from Ibn ʿAbbās, and going back to the Prophet (= *marfūʿan*): "When God Most High wanted to create the water, He created a green hyacinth from light; the thickness of it was like the thickness of the seven heavens, the seven earths, and what is between them. Then He called it; and when it heard God's speech it dissolved in terror to the point of becoming water. And it is trembling from fear of God Most High until the day of Resurrection. Then He created the wind, and He placed the water on the back of the wind. Then He created the throne, and He gave it its place on top of the water."

2. Al-Firyābī, Ibn Ǧarīr, Ibn Abī Ḥātim, Abū š-Šayḫ and al-Ḥākim in the *Mustadrak*, even giving it the qualification of an authentic one, mention the following tradition from Ibn ʿAbbās (may God grant them both His favour!): "He was asked: 'Since the throne stands on the water, on what does the water rest?' — He replied: 'On the back of the wind.' "

3. Abū š-Šayḫ quotes Wahb as saying: "Then God created the wind, and He spread it out over the water. It beat the water, so that it turned into waves and foam."

4. He quotes Ibn ʿAbbās as saying: "The water and the wind are two of God's armies. The wind is God's greatest army."

5. And Muǧāhid, according to him, said: "The wind has two wings and a tail."

6. Further, Abū š-Šayḫ cites this tradition from Ibn ʿAmr: "God's messenger (God's blessing and peace be with him!) said: 'God let out only as much wind against the people of ʿĀd as can be compared with the place of the ring.' "

7. He quotes a similar statement from the Ḥadīṯ of Ibn ʿAbbās, as going back to the Prophet (= *marfūʿan*).

8. And he cites the following saying from Kaʿb: "The inhabitant of the

on Tuesday. Therefore people say that it is a heavy day. He created the day and the trees on Wednesday. And He created the birds, the wild animals, the animals of prey, the reptiles and the epidemics on Thursday. He created man on Friday. And He had terminated the work of creation on Saturday."

5. Al-Buḫārī (may God grant him mercy!), in his *Al-Adab al-mufrad*, cites a saying of Abū Hurayra (may God grant him His favour!), who transmitted it from the Prophet (God's blessing and peace be with him!): "No one among you shall say: 'Oh, you failure of time!' God said: 'I am the time! I send the night and the day. And when I want I hold them both back!' "

The Fifth Chapter

What is mentioned concerning night and day and the hours

1. Abū š-Šayḫ, through the intermediary of ᶜAbd al-Munᶜim b. Idrīs, who had it from his father, who had it from Wahb, who had it from Salmān, cites this tradition: "As to the night, an angel is in charge of it, who is called Šarāhīl. When night-time approaches, he takes a black pearl and suspends it in front where the Sun will set. When the Sun catches a glimpse of it, it is overcome by fear in the quickest instant. The Sun has been given orders not to set until it has seen the pearl. So, when it has set, the night comes. And the pearl remains suspended, until another angel, who is called Harāhīl, comes with a white pearl and suspends it in front where the Sun is rising. When Šarāhīl sees it he displays his pearl towards him. Then, the Sun catches a glimpse of the white pearl; and it rises. For it has received orders not to rise until it has seen the white pearl. When the Sun has risen the day comes up."

2. Al-Ḥākim cites the following tradition from Abū Hurayra, and he makes it authentic: "A man came to the Prophet (God's blessing and peace be with him!) and said: 'Oh Muḥammad, did you see a garden the extension of which is as great as the heavens and the earth? — And where is the fire (= hell)? Did you see the night which enwraps everything? — And where is the day located?' — He responded: 'God knows better! Thus God does whatever He wants!', said he."

3. Abū š-Šayḫ relates from Ibn ᶜAbbās that he was asked: "Which one was earlier, the night or the day?" — He replied reciting: "Or have not those, who disbelieve, seen that the heavens and the earth were sewn together in one piece; so We ripped the two apart." — Then he said: "Was there anything but darkness between the two? And this is that you know that the night was there before the day."

4. And he mentions that Ibn ᶜAbbās (may God show them both His favour!) said: "God created a day, and He called it 'Sunday'. Then He created a second, and He called it 'Monday'. Then He created a third, and He called it 'Tuesday'. Then He created a fourth, and He called it 'Wednesday'. Then He created a fifth, and He called it 'Thursday'. He created the earth on Sunday and Monday. And He created the mountains

with him!) said: 'When the star rises it takes away disease from every land.' "

50. Al-Ḥākim, in the *Mustadrak*, cites the following tradition from Ibn Abī Malayka, through the intermediary of Ibn Ǧarīǧ, and he makes it authentic according to the stipulation of the masters: "Early in the morning I went to Ibn ᶜAbbās. He told me: 'I did not sleep yesterday.' — I asked: 'Why not?' — He replied: 'They said the comet has appeared, so I was afraid that the smoke was already coming in.' "

it by stations...': "God has set stations for it. And He made it decrease until it is like the raceme of the palm-tree."

40. And concerning God's word 'No, I swear by the slinkers, the runners, the sinkers', Abū š-Šayḫ quotes a saying of Ibn ᶜAbbās: " '*Al-Ḫunnas*'(= 'the slinkers') are stars which pass through the Milky Way like the running horse."

41. Again he quotes Ibn ᶜAbbās (may God grant them both His favour!) as saying: "In Canopus the stars were given the commands, and he applied the command. But he rebelled, and through him there was rebellion."

42. Through the intermediary of Abū ṭ-Ṭufayl he derives the following statement from ᶜAlī b. Abī Ṭālib (may God give him honour!): "Canopus was a tithe-collector in the Yemen; he defiled himself in his dealings with people by injustice. So God transformed him into a star."

43. He quotes a similar tradition from another authority based on Abū ṭ-Ṭufayl (may God grant him His favour!), that one going back to the Prophet, but having an incomplete chain of transmission.

44. And through the intermediary of Ibn ᶜAdī, based on a weak chain of transmission, he cites this tradition going back to the Prophet from Ibn ᶜAmr: "Canopus was a tithe-collector who was very injust. So God transformed him into a star."

45. Abū š-Šayḫ quotes al-Ḥakam as saying: "*Suhayl* (Canopus) did not rise except in Islām; for he is the transformed."

46. And Abū š-Šayḫ cites the following statement from al-Qurṭubī: "By God, not a single inhabitant of the earth has a star in the sky; but people follow the fortunetellers and take the stars for a cause."

47. Ibn Ǧarīr, Ibn Abī Ḥātim and Abū š-Šayḫ cite the following statement from ᶜAbd ar-Raḥmān, who has it from Ibn Zayd b. Aslam, concerning God's word 'And from the evil of the night when it becomes dark': "The Arabs used to say: '*Al-Ġāsiq* (= the night) is the setting of the Pleiades. For the illnesses and epidemics become frequent at its setting and disappear at its rising."

48. Abū š-Šayḫ quotes Abū Hurayra as saying: "The star of the early morning does not rise except it takes away every epidemic and disease, or they decrease in intensity."

49. Aḥmad, aṭ-Ṭabarānī in the *Ṣaġīr*, Ibn as-Sunnī in the *Ṭibb an-nabawī*, *Abū š-Šayḫ* and al-Ḫaṭīb in the *Kitāb an-nuǧūm* quote the following saying of Abū Hurayra: "God's messenger (God's blessing and peace be

less than that, half of it, or a third, or two thirds, fall into the water; and the rest stays on the wheel. And the angels in charge of it split into two groups: One group concentrates on the Sun and pulls it towards the wheel; and the other group concentrates on the wheel and pulls it towards the Sun. — When it sets, it is lifted up to the seventh heaven in the swiftness of the angels' flight. But it is detained below the throne. So it asks permission to enter where it was told to rise. Then it is sent over the distance between the seventh heaven and the lowest steps of paradise in the swiftness of the angels' flight. So it descends opposite the rising-point, from heaven to heaven; and when it arrives at this heaven, just then dawn sets in. And when it is carried to this surface of the sky, just then the Sun rises." —

He continued: "And God Most High created a veil of darkness in the East. He placed it on the seventh sea. Its measure is the number of nights in this world from its creation by God up to the day of Resurrection. When it is around the setting of the Sun, an angel, who is in charge of the night, approaches and takes hold of the darkness of that veil. Then he turns towards the West, and ever so slightly, bit by bit, he lets that darkness pass through his fingers. He watches over the sunset glow. When the sunset glow has disappeared, he sends out all the darkness. Then he spreads out his two wings; they extend to the two extremities of the earth and the two sides of the sky. So the darkness of night rises through his two wings. — When dawn comes up, he puts his two wings together. Then he collects the whole darkness, bit by bit, with his two hands, starting in the East. And he puts it on the seventh sea in the West."

36. Abū š-Šayẖ quotes Maysara as saying: "We received the instruction that the Sun emits a sound when it sets. And so does the Moon, the stars, the night, the day, and the angels."

37. And according to him as-Suddī said: "As to the mountain behind which the Sun rises, its height is eighty Farsaẖs in the sky."

38. Also according to Abū š-Šayẖ, al-Ḥasan said: "The Moon spoke to its Lord: 'Oh God, You have given preference to the Sun over me, made me smaller and given me the second rank; do not show what you have taken away from me.' As a result, the Moon is never seen except as full moon on the side that faces the Sun."

39. ʿAbd b. Ḥamīd and Abū š-Šayẖ cite the following statement of Qatāda, concerning God's word 'And the Moon — We have determined

Raḥmān b. Unbarī, concerning God's word 'The Lord of the Easts and Wests': "The Sun has 360 towers in the East and 360 towers in the West. In two days it does not rise from one tower, and in two days it does not set in one tower."

32. And Abū š-Šayḫ quotes Yaḥyā b. Ādam as stating: "The Sun stays in every tower for a month. And the tower has thirty risings; between every two risings there is one barley-corn, until it has completed thirty days. Then it transfers to the next tower."

33. Ibn ᶜAsākir cites this tradition from Ibn ᶜAbbās: "By the One in whose hand my soul is! The Sun does not rise until 70,000 angels goad it on, calling to it; 'Rise! Rise!' It responds: 'I will not rise over a people that worships me instead of God!' — So an angel approaches it, moving it on for the illumination of Adam's descendants. And Satan approaches it, intending to detain it from rising. It then rises between his two horns, and God Most High burns him under it. — And this is the saying of God's messenger (God's blessing and peace be with him!): 'The Sun does not rise except in between Satan's two horns.' — Furthermore, the Sun does not set except it prostrates itself in adoration of God. Satan approaches it, intending to detain it from its prostration. So it sets in between his two horns, and God burns him under it. — God's messenger (God's blessing and peace be with him!) said: 'And it does not set except in between Satan's two horns.' "

34. Ibn al-Buḫārī, in his *Ta'rīḫ*, mentions the following tradition from Anas, who derives it from the Prophet (God's blessing and peace be with him!): "When the Sun and the Moon, either one of them, see some of the greatness of God Most High, they deviate from their courses and are eclipsed."

35. Abū š-Šayḫ and Ibn Mardawayh in the *Tafsīr*, through the intermediary of Abū ᶜIṣma Nūḥ b. Abī Maryam, cite the following tradition from Muqātil b. Ḥayyān, from ᶜIkrima, from Ibn ᶜAbbās (may God grant both of them His favour!): "God created a sea below the sky, extending over three Farsaḫs. This is an enclosed wave, standing in the air by God's command. Not a drop is dripping from it, as it drags along in the speed of the arrow. On it sail the Sun, the Moon, and the stars. As God's word has it: 'Each is afloat in a sphere.' '*Al-falak*' is the revolution of the wheel in the depth of that sea's flood. — When God wishes that the eclipse occurs, the Sun falls down from the wheel; and it falls into the flood of that sea. When God wants to magnify the miracle, it falls down completely; and no part of it remains on the wheel. But when God wants

25. Ibn Abī Šayba, Ibn al-Mundir and Abū š-Šayḫ, through two intermediaries, derive the following saying from Saᶜīd b. al-Musayyib (may God grant His favour to them!): "The Sun does not rise until 360 angels are goading it on; for it is disgusted of being worshipped instead of God."

26. Ibn al-Mundir quotes ᶜIkrima as saying: "The Sun does not rise until a stress is put on it, as it is put on the bow."

27. Aṭ-Ṭabarānī, Abū š-Šayḫ and Ibn Mardawayh cite the following tradition from Abū Umāma al-Bāhalī (may God grant him His favour!): "God's messenger (may God's blessing and peace rest on him!) gave us this instruction: 'Seven angels are given charge of the Sun; they throw ice at it every day. If that were not done, it would not reach anything without setting it afire.' "

28. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following tradition from ᶜAlī b. Abī Ṭālib (may God grant him His favour!): "He said: 'When the Sun rises, the two who are given charge over it rejoice with it. They follow it on its course until, at its pole, it comes in front of the foundation of the throne; and it prostrates in adoration. Then it is told: 'Go forth!' And it proceeds by the power of God, the Mighty and Glorious. When it rises its face spreads light over the seven heavens, and its backside over the people of the earth. — In the celestial sphere there are 360 towers; every tower among them is bigger than the Arabian Peninsula. The Sun has a station in every tower among them in which it stays, until it comes to its pole. — An angel is standing in the East; he calls out: 'Oh God, give an exhausted one a successor!' And there is another angel standing in the West, who calls out: 'Oh God, give a detainer ruin!' "

29. Ibn al-Mundir cites the following statement of ᶜIkrima: "The Sun does not rise until 70,000 angels call to it: 'Rise!' — But it responds: 'How can I rise when I am worshipped instead of God?' — And two angels urge it on until it moves upward. If the water of heaven did not cool it, the inhabitants of this earth would be burned by the heat of the Sun. And if it were not for the noises of the Byzantians or Rome, people would hear. So the Sun runs its course, when it is obliged to do so."

30. Abū š-Šayḫ and Ibn ᶜAsākir quote Ibn ᶜAbbās as teaching: "The Sun has 360 small windows; every day it rises in one window. Then it does not return to that window until the same day in the following year. But it only rises in disgust, saying: 'Oh God, do not make me rise over Your creatures! For I see them rebelling against You.' "

31. Abū š-Šayḫ cites the following explanation of Saᶜīd b. ᶜAbd ar-

continues its course in its sphere under the earth by night, until it rises in its eastern position. Similarly the Moon."

18. Abū š-Šayḫ quotes Ibn ᶜAbbās concerning God's word 'And everyone is swimming in a sphere': "It revolves in the doors of heaven as the whorl revolves on the spindle."

19. Abū š-Šayḫ cites the following tradition from al-Ḥasan al-Baṣrī (God's mercy be with him!): "When the Sun has set, it revolves in the celestial sphere towards the region opposite the *Qibla*, until it is back in the East where it rises. And it pursues its path in the sky from its rising to its setting. Then it returns to the region towards the opposite of the *Qibla*, up to its rising. Thus it is subjugated in its sphere, and similarly the Moon."

20. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following statement from Ḥassān b. ᶜAṭīya: "The Sun, the Moon, and the stars are subjugated in a sphere between the sky and the earth, revolving."

21. Al-Buḫārī, in his *Ta'rīḫ*, Abū š-Šayḫ and Ibn ᶜAsākir quote Kaᶜb as saying: "When God wants the Sun to rise from the place of its setting, He turns it around with its axis. Thus He makes its East its West, and its West its East."

22. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following tradition from Ibn ᶜAmr (may God grant both of them His favour!): "If the Sun pursued a single course, no one of the people on earth would derive a benefit from it. But it changes in Summer, and it is obstructed in Winter. If it rose in Summer, where and when it rises in Winter, the heat would not bring them to ripeness (i.e. God's creatures). And if it rose in Winter where and when it rises in Summer, the cold would cut them down."

23. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following statement of ᶜIkrima: "When the Sun sets, it enters a sea under the throne. Then it praises God the Exalted until, in the morning, it starts entreating its Lord to be freed from coming forth. He says: 'Why?' — It replies: 'Truly, when I go out, I am worshipped instead of you, my Lord!' — So He says: 'Go out! For nothing of this is your responsibility. Their reward will be hell!' "

24. ᶜAbd ar-Razzāq and Abū š-Šayḫ quote Ibn ᶜAmr as saying: "The Sun rises, but the evil deeds of Adam's descendants are repelling for it. When it sets, it gives its greeting and bows down in worship. It asks for permission (to leave). And He will give it this permission until the time of its setting; it gives its greeting and bows down in worship. And then it will not be given permission, but made to sit down as long as God wants. Then it will be told: 'Rise where you set!' "

the Moon therein for a light': "Its back is towards what is close to the earth, and its face is towards what is close to the celestial sphere."

10. Ad-Daylamī quotes Ibn ᶜAmr as narrating: "God's messenger (God's blessing and peace be with him!) stated that the Sun and the Moon have their faces towards the throne, and their backs towards mankind."

11. Abū š-Šayḫ quotes Ibn Šūḏab as saying: "The Sun is just one 3000th of the light beneath the throne."

12. And from Salmān al-Fārisī he cites the following statement: "God created the Sun from the light of His throne, and He inscribed on his face: 'Truly, I am God; there is no deity except I. I made the Sun by my power and set him going by my command.' — And He inscribed on its belly: 'Verily, I am God; there is no deity except I. My approval is a word, my wrath is a word, my mercy is a word, and my punishment is a word! — Moreover, He created the Moon from the light of the veil which is next to Him. On its face He inscribed: 'Verily, I am God; there is no deity except I. I made the Moon and created the various kinds of darkness and the light. The various kinds of darkness are what I lead astray with; and the light is my guidance. I lead astray whom I want, and I guide whom I want.' — On its belly He inscribed: 'Verily, I am God; there is no deity except I. I created the good and the evil by my power and might; with the two I test whatever being in my creation I want."

13. With al-Kalbī as the intermediary, Abū š-Šayḫ cites the following tradition from Ibn Ṣāliḥ, who related it from Ibn ᶜAbbās (may God grant His favour to both of them!): "A man addressed him: 'How much is the length of the Sun, and how much is its width?' — He replied: '900 Farsaḫs by 900 Farsaḫs. And the length of the stars is twelve Farsaḫs, by twelve Farsaḫs.' "

14. Ibn Abī Ḥātim and Abū š-Šayḫ cite this statement of Qatāda: "The length of the Sun is 80 Farsaḫs, by 80 Farsaḫs."

15. Moreover, Ibn Abī Ḥātim and Abū š-Šayḫ quote ᶜIkrima as saying: "The Sun is proportionate to the world, the plus is a third. Also the Moon is proportionate to the world."

16. They have this tradition from yet another authority with the words 'extension of the earth' instead of 'proportionate to the world' in the two passages.

17. Ibn Abī Ḥātim and Abū š-Šayḫ derive the following saying from Ibn ᶜAbbās (may God grant His pleasure to them both!): "The Sun is like a wheel, by day running on the sky in its sphere. And when it has set, it

The Fourth Chapter

What is mentioned concerning the Sun, the Moon, and the Stars

1. God the Exalted said: "And He set the Moon therein for a light and the Sun for a lamp."

2. Moreover, He said: "And He subjected to you the Sun and the Moon, constant upon their courses."

3. The Most High also said: "It is He who has set the stars for you, that you might find your way by them in whatever darkness there is on land and sea."

4. And the Mighty and Great said: "Verily, We adorned the lower heaven with the adornment of the stars, and as a protection against every rebellious satan."

5. Aṭ-Ṭabarānī, in the *Ausaṭ*, Abū š-Šayḫ and Ibn Mardawayh quote Anas as saying: "God's messenger (God's blessing and peace be with him!) told me: 'The Sun, the Moon, and the stars are made of the light of the throne.' "

6. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following tradition from Kaᶜb: "God created the Moon from the light of the earth. Indeed, He said: 'And He set the Moon into them for a light.' Furthermore, He created the Sun from the fire of the earth. Truly, He said: 'And He set the Sun for a lamp.' For the lamp can only be (a lamp) by fire."

7. Abū š-Šayḫ relates from Muᶜāwiya b. Ṣāliḥ that he received this instruction: "There are four fires: A fire that eats and drinks — this is the fire of hell. Then, a fire that does not eat nor drink — this is the fire of this world. Further, a fire that eats, but does not drink — this is the fire from which the angels are created. Finally, a fire that drinks, but does not eat — this is the fire of which the Sun and the devils are made."

8. Ibn Mardawayh, Ibn ᶜAsākir and Abū š-Šayḫ quote Ibn ᶜAmr as saying: "The Sun and the Moon have their faces towards heaven and their backs towards earth. They illuminate whatever is in heaven, just as they illuminate whatever is on earth."

9. Relying on a trustworthy chain of transmission, Abū š-Šayḫ cites the following explanation of Ibn ᶜAbbās concerning God's word 'And He set

Finally: "And what is under the fish?" — He said: "The abysses and darkness; and knowledge is at its end."

44. Ibn Abī Ḥātim cites the following explanation of ᶜAṭīya al-ᶜAufī concerning God's word'... and though it be in a rock...': "This is a green, square rock under the earth. The question was raised: And what is on it? — He said: Water. — Again it was asked: And what is on the water? He said: The fish. — And again: And what is on the fish? — He replied: The earths. — Further: The rock, on what does it rest? — He answered: On the horns of the bull. — Again: Concerning the bull, on what does it stand? — He replied: On the (humid) ground."

45. Again concerning God's word '... and though it be in a rock', Ibn Abī Ḥātim quotes ar-Rabīᶜ b. Anas as stating: "This is the rock which is placed under the lowest earths."

46. Ibn Ǧarīr and Ibn Abī Ḥātim cite the following statement from ᶜAbdallāh b. al-Ḥāriṯ: "The rock is a green rock on the back of the fish."

47. Concerning God's word '... in a day whose measure is 50,000 years', Abū š-Šayḫ quotes Wahb as explaining: "This is the interval between the lowest part of the earth and the throne."

48. And from ᶜAbda Ibn Abī Lubāba Abū š-Šayḫ cites the following saying: "The world has seven regions. The Gog and Magog live in six regions, and the rest of mankind in one region."

49. In his book *Radd ᶜalā l-Ǧahmīya* ᶜUṯmān b. Saᶜīd ad-Dārimī quotes this saying of Ibn ᶜAbbās (may God grant His pleasure to both of them!): "The chief heaven is the heaven in which the throne is located. And the chief earth is the one on which we live."

50. Ibn al-Munḏir quotes the following saying from Ibn ᶜAbbās (may God grant His pleasure to them both!): "The best heaven is the heaven in which the throne is located; and the best earth is that earth on which you live. And truly, the best shrub is the thorn (Lycium europaeum or arabicum); for the staff of Moses (on him be peace!) was made from it."

earth, and under the third earth, there are Ǧinn. If they became visible to you, you could not see the light of the Sun together with them. On every corner there is one of the seals of God, the Exalted and High. And for every seal there is one of the angels. Every day God sends one of the angels in His presence to it in order to take care of what there is with you."

38. According to al-Bazzār, Ibn ᶜAdī and Abū š-Šayḫ Ibn ᶜAmr (may God grant His pleasure to both of them!) related that the Prophet (God's blessing and peace be with him!) was asked about the earth, namely what it rests on. He answered: "On water." Then someone said: "Did you see the water, what does it rest on?" — He replied: "On a green rock." — And the matter was pursued: "Did you see the rock, what is it on?" — He said: "On the back of a fish the two ends of which come together at the throne." — It was inquired further: "Did you see the fish, what is it on?" — He answered: "On the shoulder of an angel who has his two feet in the air."

39. Abū š-Šayḫ quotes Kaᶜb as saying: "The seven earths rest on a rock, the rock in the hand of an angel. The angel stands on the wing of the fish. The fish is in the water. The water is placed on the wind. And the wind is over the abysses, a sterile wind which does not cause any fertility; its horns are suspended at the throne."

40. Ibn Abī Ḥātim cites the following explanation of as-Suddī concerning God's word '... on a rock...': "This rock is neither in the heavens nor on earth. It is under seven earths; and an angel stands on it."

41. Ibn Abī Ḥātim and Abū š-Šayḫ, through the intermediary of as-Suddī, cite this tradition from Abū Mālik: "The rock which is under the earth is the final portion of creation; four angels stand on its sides, and their heads are under the throne."

42. Abū š-Šayḫ quotes Abū Mālik as stating: "Verily, the earths are placed on a fish, and the chain is in the ear of the fish."

43. Ibn Abī Ḥātim relates of Kaᶜb that he was questioned about what is under this earth. He said: "Water." — Again: "And what is under the water?" — He replied: "Earth." — "And what is under the earth?", it was asked. — He said: "Water." — Further: "And what is under the water?" — He answered: "Earth." Then: "And what is under the earth?" — He said: "Water." — It was asked: "And what is under the water?" — He replied: "Earth." — Again: "And what is under the earth?" — He said: "A rock." — Then: "And what is under the rock?" — He replied: "An angel." — "And what is under the angel?", it was asked. — He said: "A fish whose two extremities are suspended at the throne." —

heavens on Thursday and Friday. To every heaven He revealed its peculiarity."

31. ᶜAbd ar-Razzāq, ᶜAbd b. Ḥamīd, Ibn Ǧarīr, Ibn Abī Ḥātim and Abū š-Šayḫ cite the following saying of Muǧāhid: "God created the earth before the sky. When it was created a steam was stirred up from it. — This is God's word: 'Then He directed Himself to the sky', which was still steam. And He formed seven heavens, one above the other; and seven earths, one below the other."

32. Abū š-Šayḫ quotes this tradition from Ḥassān b. ᶜAṭīya: "As to the earth which is under this one, it contains the stones of the people in hell-fire. The following (earth) — it is the place of the sterile wind. The one that comes after that — it carries the scorpions of the people in hell-fire. The next one — it is the habitat of the vipers for the people in hell-fire. And the one that follows — it accommodates the devil of the devils."

33. And from ad-Daynārī he cites the following saying: "The sterile wind is on the second earth. As to the third, it carries the stones of hell-fire. The fourth has the scorpions of hell-fire, the fifth the vipers of hell-fire, the sixth the brimstone of hell-fire, and the seventh earth is the place of the devil."

34. Abū š-Šayḫ quotes Muǧāhid as saying: "*Siǧǧīn* is a rock under the seventh earth in hell. It was turned around, and the book of the adulterer was placed underneath."

35. In the *Mustadrak* al-Ḥākim cites the following tradition from Ibn ᶜAmr, going back to the Prophet *(marfūᶜan)*: "On the fourth earth there is the sulphur of hell; on the fifth there are the vipers of hell; and on the sixth there are the scorpions of hell."

36. Ibn Abī Ḥātim and al-Ḥākim cite the following tradition from ᶜUbaydallāh b. ᶜUmar (may God be pleased with them both!): "God's messenger (God's blessing and peace be with him!) stated, concerning the earths, that between every earth and the one next to it there is a distance of 500 years. The uppermost is on the back of a fish the two extremities of which meet in heaven. The fish is on a rock, and the rock is in the hand of the angel. — The second (earth) is the prison of the wind. On the third there are the stones of hell, on the fourth the sulphur of hell, on the fifth the vipers of hell, on the sixth the scorpions of hell. And on the seventh there is hell *(saqar)*, and in it the devil *(Iblīs)*, put in iron: One hand in front, and the other behind him. Whenever God wants him freed, he is freed as long as He wants it."

37. Abū š-Šayḫ quotes the following saying of Ibn ᶜAmr: "On the fourth

20. Ibn Abī Ḥātim quotes aš-Šaᶜbī as narrating that Ibn ᶜAbbās (may God be pleased with them both!) wrote to Abū l-Ǧald, asking him about the sky, namely of what substance it is. In reply he wrote to him (i.e. Ibn ᶜAbbās): "Verily, the sky consists of an enclosed wave."

21. Ibn Abī Ḥātim cites the following tradition from Ḥaba al-ᶜUranī: "One day I heard ᶜAlī (may God be pleased with him!) swear: 'By the one who created the sky from steam and water!' "

22. Ibn Abī Ḥātim and the Šayḫ quote Kaᶜb as stating: "Heaven is whiter than milk."

23. ᶜAbd ar-Razzāq and Ibn Abī Ḥātim quote Sufyān aṯ-Ṯaurī as saying: "There is a rock under the earths. We have been told that it is that rock from which the greenness of the sky originates."

24. Abū š-Šayḫ quotes the following explanation of Ibn ᶜAbbās concerning God's word 'By heaven with all its tracks': "With beauty and splendour," he said. "Indeed, its meaning is: Like the garment that is (well) knotted."

25. And again concerning this verse, he quotes al-Ḥasan as saying: "With its beautiful creation, firmly joined together through the stars."

26. Concerning this verse, too, he mentions the explanation of Abū Sāliḥ: "With its hard disposition."

27. From Ibn ᶜAmr (may God be pleased with them both!) he cites the following interpretation: " 'By heaven with all its tracks' is (said of) the seventh heaven."

28. From ᶜAlī b. Abī Ṭālib (may God grant him honour!) he quotes the following tradition: "The name of the lowest heaven is *Raqīᶜ*; and the name of the seventh heaven is *aṣ-Ṣurāḥ.*"

29. He cites the following tradition from 'Uṯmān b. Saᶜīd ad-Dārimī, quoted in the book *Radd ᶜalā l-Ǧahmīya* from ᶜAbdallāh b. ᶜAmr: "When God Most High wanted to create things, while His throne stood on the water and no earth nor heaven were in existence, He created the wind. He gave it power over the water, with the result that its waves became agitated and its accumulations were stirred up. From the water He brought forth steam, clay and sediments. He gave His command to the steam; so it rose, took a high position and expanded upwards. Then He created the heavens from it. And from the clay He formed the earths; and the mountains from the sediments."

30. Abū š-Šayḫ quotes ᶜAbdallāh b. Salām as saying: "God created the

God's word 'The two (i.e. the heavens and the earths) were sewn together, so We took the two apart': "Of earths: six — and that makes seven; and of heavens: six — and that makes seven."

11. From Iyās b. Muᶜāwiya he relates this saying: "This heaven is vaulted over the earth like a dome."

12. ᶜAbd b. Ḥamīd and Abū š-Šayḫ quote Wahb as saying: "Some parts of heaven encircle the earths and the oceans like the ropes of a tent."

13. Ibn Abī Ḥātim quotes the following saying of the Prophet (God's blessing and peace be with him!) from Ǧubayr b. Maṭᶜam: "God is seated on His throne, His throne stands on His heavens, and His heavens are on His earth like this! And he indicated with his finger the likeness of a dome."

14. Ibn Abī Ḥātim quotes as-Suddī as giving the following explanation of God's word 'Heaven an edifice': "The edifice of heaven spans over the earth like a dome-structure; it is a roof over the earth."

15. Also concerning God's word 'Heaven an edifice', Ibn Ǧarīr cites the following tradition from Ibn Masᶜūd and some of the Companions: "A roof over the earth like a dome-structure."

16. Ibn Abī Ḥātim quotes al-Qāsim b. Abī Bazza as saying: "Heaven is not quadrangular, but it is vaulted. To the humans it appears green."

17. Ibn Abī Ḥātim and Abū š-Šayḫ cite the following tradition from Ibn ᶜAbbās: "A certain man said: 'Oh messenger of God! What is this heaven?' — He answered: 'This is a wave held off from you."

18. Rāhūya, in his *Musnad*, aṭ-Ṭabarānī, in *al-Ausaṭ*, Ibn Abī Ḥātim, Abū š-Šayḫ, and Ibn al-Munḏir quote the following statement of ar-Rabīᶜ b. Anas: "The lowest heaven consists of a wave that is held back. The second consists of white marble; the third of iron; the fourth of copper; the fifth of silver; the sixth of gold; and the seventh of rubies." Ibn Abī Ḥātim adds: "And what is above that are deserts of light. No one knows what is above that except God Most High and the angel in charge of the veils, called Mīṭāṭarūs."

19. Abū š-Šayḫ, based on a very weak chain of transmission, relates the following tradition from Salmān al-Fārisī (may God he pleased with him!): "As regards heaven, the lowest one consists of green smaragds; its name is *Raqīᶜā*. The second is of white silver; its name is *Araqlūn*. The third is of rubies; its name is *Qaydūm*. The fourth is of white pearls; its name is *Māᶜūnā*. The fifth is of red gold; its name is *Dīᶜā*. The sixth is of green hyacinths; its name is *Daquā*. The seventh is of light; its name is *ᶜArībā*."

Ibn Masᶜūd (may God show him His pleasure!): "Between heaven and earth there is a distance of 500 years. And the distance between every two heavens is 500 years. The diameter of every heaven and earth, namely the thickness, is also as much as 500 years. Then, the interval between the seventh heaven and the footstool measures 500 years, as does that between the footstool and the water: 500 years. The throne stands on the water, and God is on the throne. He knows what you are on."

8. Ibn Ǧarīr and Ibn al-Mundir quote the following tradition from Ibn Masᶜūd and some of the Companions: "Verily, God's throne stood on the water. He had not yet created anything except what He created before the water. So, when He decided on the work of creation, He caused steam to come forth from the water, and it rose over the water and was high above it. He named it 'heaven'. Thereafter He desiccated the water, and thus established it as one earth. Then He split it up and in the course of two days, Sunday and Monday, He formed it into seven earths. He created the earth on top of a fish, the one He mentions in His exalted word: 'By the fish and the stylus'. The fish is in the water, and the water rests on top of stones. The stones are placed on the back of an angel, the angel on a rock, the rock on the wind. This is the rock of which Luqmān (peace be with him!) says: 'It is neither in heaven nor on earth'. The fish moves and stirs, and there is an earthquake. He established the mountains on earth, and it became stable. And He created the mountains on it, varieties of food for its inhabitants, its trees and whatever it needs, (all this) in the course of two days, Tuesday and Wednesday. — Thereafter He turned towards heaven, which consisted of steam. That steam originated from the breathing of the water, while it was breathing. He established it as one heaven. Then He split it up and in the course of two days, Thursday and Friday, He formed it into seven heavens. Indeed, He named that day the day of union, for on that day He united the creation of the heavens and the earth. In every heaven He revealed its peculiarity." — He said: "Then He created the angelic creatures belonging to every heaven, and also their seas and icebergs, and what remains unknown. Thereafter He adorned the lowest heaven with stars; He created them as ornaments and a protection from the devils."

9. Abū š-Šayḫ quotes the following tradition from Saᶜīd b. Ǧubayr concerning God's word 'The two (i.e. the heavens and the earth) were sewn together, so We took the two apart': "The heavens and the earths," he said, "were clinging together. So He raised the heaven, beginning from earth. And He kept taking them apart."

10. Abū š-Šayḫ cites the following tradition from Muǧāhid concerning

extension is as great as that between heaven and earth. Finally, above that, there is God, the Praised and Exalted!"

5. At-Tirmidī, Ibn Mardawayh and Abū š-Šayḫ quote the following tradition from Abū Hurayra (may God be pleased with him!): "We were sitting with God's messenger (God's blessing and peace be with him!) when a cloud passed over us. He said: 'Do you know what this is?' — They responded: 'God and His messenger know better!' — He explained: 'This is the one that covers, this is the one that waters the earth. God leads it to the people of a land who do not worship Him and who do not return thanks to Him. Do you know what is above that?' — They replied: 'God and His messenger know better!' — He said: 'Above that there is an enclosed wave and a secured roof. And do you know what is above that?' — They answered: 'God and His messenger know better!' — He said: 'Above that there is a heaven. Do you know what is above that?' — They replied: 'God and His messenger know better!' — He said: 'Above that there is another heaven. Do you know what is between the two?' They responded: 'God and His messenger know better!' — He said: 'Well, between the two there is a distance of 500 years.' (And so he continued) until he had enumerated seven heavens, the distance between each two heavens being that of 500 years. Then he asked: 'Do you know what is above that?' — They replied: 'God and His messenger know better!' — So he said: 'Above that there is the throne. And do you know what the distance is between the two?' — They said: 'God and His messenger know better!' He explained: 'Well, that interval is like the one between two heavens,' or as he had said. Then he continued: 'Do you know what this is, this earth? Do you know what is below it?' — They responded: 'God and His messenger know better!' — He said: 'Another earth; and the distance between the two is 500 years.' And so on, until he had enumerated seven earths, the interval between every two earths being 500 years."

6. Ibn Abī Ḥātim and Abū š-Šayḫ quote Kaᶜb as stating: "Verily, God created seven heavens, and of earths the like of them. He made the distance between every two heavens like that between the lowest heaven and the earth. And He made their thickness like that. He also made the distance between every two earths like that between the lowest heaven and the earth, and the thickness of every earth like that. The throne was above the water. And He raised the water, until He placed the throne on it. Then He took the water to give it a place under the seventh earth."

7. Ibn al-Mundir, in his *Tafsīr*, ʿUṯmān b. Saᶜīd ad-Dārimī, in the book *Radd ᶜalā l-Ǧahmīya*, and Abū š-Šayḫ cite the following tradition from

The Third Chapter

What is mentioned concerning the seven heavens and the seven earths

1. A word of God Most High: "It is God Who created seven heavens, and of earths their like."

2. Ibn Rāhūya, in his *Musnad*, Abū š-Šayḫ and al-Bazzār, on the basis of a sound chain of transmission that goes back to Abū Ḏarr, report that God's messenger (God's blessing and peace be with him!) presented the following teaching: "The interval between heaven and earth is the distance of 500 years. The diameter of every heaven is also as much as 500 years. And the interval between this heaven and the one that comes after it is also as big as 500 years. Thus up to the seventh heaven, and with the earths it is similar. And the distance between the seventh heaven and the throne corresponds to all that."

3. Abū š-Šayḫ cites the following tradition from Abū d-Dardā' (may God be pleased with him!): "God's messenger (God's blessing and peace be with him!) said: 'The diameter of the earth is the distance of 500 years, that of the second is similar to that, and the interval between every two earths is also like that.' Then he expounded the meaning of this."

4. Aḥmad b. Ḥanbal (may God be pleased with him!), in his *Musnad*, Abū Dā'ūd, at-Tirmiḏī, who declares it to be of good quality, Ibn Māǧa, Ibn Abī ᶜĀṣamm, in his *Sunna*, Abū Yaᶜlā, Ibn Ḫuzayma, aṭ-Ṭabarānī, al-Ḥākim, and — giving it a sound derivation — Abū š-Šayḫ have the following tradition from al-ᶜAbbās b. ᶜAbd al-Muṭṭalib: "We were with the Prophet (God's blessing and peace be with him!) when he said: 'Do you know what the distance is between heaven and earth?' — We answered: 'God and His messenger know better!' — He said: 'Between them there is a distance of 500 years; and from every heaven to another heaven there is a distance of 500 years. The diameter of every heaven, too, is 500 years. Above the seventh heaven there is a sea between the surface of which and the greatest depth the distance is as big as that between heaven and earth. Then, above that, there are eight mountain goats; from their knees down to their hoofs, the distance equals that between heaven and earth. Still higher up there is the throne; between its lowest and its uppermost part the

and earth. This stylus said: 'With what shall I be running, Lord?' — He replied: 'With that which I am creating and which comes into being within My creation, namely rain, plants, souls and good action'. That is, through it there is action, subsistence and fixed time. And the stylus kept running with that which comes into being, until the day of Resurrection. God has recorded it in the hidden book which He keeps with Himself under the throne."

13. Relying on the transmission of Ibn ᶜAmr (may God be pleased with them both!) Abū š-Šayḫ relates the following statement of the Prophet (God's blessing and peace be with him!): "Verily, as the first thing God Most High created, He created the stylus. It consists of light, extending over a distance of 500 years. Then He gave it His command. And it kept running with whatever comes into being until the Day of Resurrection. So accept as true whatever comes to you from God through His power."

14. And he quotes Muǧāhid as saying: "God created the reed as the first thing He created (*al-yarāᶜ* is another word for *al-qaṣab*). Thereafter He created the stylus from that reed. Then He said: 'Write down what will come into being until the Day of Resurrection!' "

15. But, on the basis of a weak chain of transmission going back to Ibn ᶜAbbās (may God be pleased with them both!), he also cites the following tradition: "The first thing God Most High created was the throne, consisting of light. Then came the footstool; then the guarded tablet from a white pearl, with its two sides being made of a ruby. Its stylus is light, and its writing is light. Every day God looks at it 360 times; and with every look He creates, He gives life and takes it, He elevates and puts down, He raises nations and He brings nations low. He created a stylus from light, the length of which is 500 years, and also its width is 500 years. And He addressed it thus: 'Write!' — It replied: 'What shall I write?' - So He said: 'Write down my knowledge in my creation until the Hour comes up!' — The tip of the stylus is split, the ink is dripping from it."

times. And He gives life and takes it, He creates and gives the means of subsistence, and He does whatever He wants."

7. Relying on the transmission of Abū Ẓalāl al-Ġaslī, Ibn Abī d-Dunyā in his *Makārim al-aḫlāq*, Abū š-Šayḫ in his *Kitāb al-ᶜaẓama* and al-Bayhaqī in his *Kitāb šuᶜab al-imān* quote the following statement of Anas (may God be pleased with him!): "God's messenger (God's blessing and peace be on him!) said that God has a tablet, made of a green chrysolite, under the throne. On it He writes: 'Verily, I am God; there is no divinity beside me! I am merciful, and I am asked for mercy. I brought into existence some 300 creatures and a few tens. Whichever of them is about to come into being with an act of profession (Truly, there is no divinity except God!), this one enters Paradise."

8. Abū š-Šayḫ, in his *Kitāb al-'aẓama*, and al-Bayhaqī, in his *Kitāb šuᶜab al-īmān*, hand down the following tradition from Abū Saᶜīd al-Ḫudrī (may God be pleased with him!): "God's messenger (God's blessing and peace be with him!) declared that in front of God there is a tablet: on it 315 codes of law are set down. The Merciful says: 'By my might and glory, no one of my servants will come to me as long as he is not attached to one of them, unless I myself bring him into Paradise.'"

9. Ibn Ğarīr and Abū š-Šayḫ, in his *Tafsīr*, quote Ğubayr b. Nufayr as stating: "Truly, God's throne was standing on the water. Then He created the stylus; and with it He wrote down what He was creating and what of His creation came into being. Thereafter that writing praised God Most High and exalted Him for a thousand years, before He created a thing of creation."

10. Based on a sound chain of transmission, Abū Yaᶜlā cites the following tradition from Ibn ᶜAbbās (may God be pleased with them both!): "According to a statement of God's messenger (God's blessing and peace be with him!), the first thing which God Most High created was the stylus. And He gave it the command to write down everything."

11. Also with a sound chain of transmission going back to Ibn ᶜAbbās (may God be pleased with them both!), aṭ-Ṭabarānī relates the following saying from the Prophet (God's blessing and peace be with him!): "When God created the stylus He said to it: 'Write!' — And it kept running with whatever comes into being up to the Last Day."

12. Aṭ-Ṭabarānī quotes Ibn ᶜAbbās (may God be pleased with them both!) as saying: "Verily, God created the throne, and He sat down on it. Then He created the stylus, and He gave it the command to keep running with His permission. The stylus is as big as the distance between heaven

The Second Chapter

What is mentioned concerning the tablet and the stylus

1. God said: ". . . on a guarded tablet."

2. And again He said: "By the fish and by the stylus."

3. Ibn Abī Ḥātim and Abū š-Šayḫ, relying on a blameless chain of transmission, quote Ibn ᶜAbbās (may God be pleased with them both!) as saying: "God created the guarded tablet with a length of a hundred years. As He was sitting on the throne, God spoke to the stylus, before He began with creation: 'Write!' — The stylus replied: 'And what shall I write, my Lord?' — He said: 'Write down my knowledge that is in my creation, until the day when the hour arises!' — And the stylus moved with what exists in God's knowledge until the day of resurrection."

4. Abū š-Šayḫ, through the intermediary of Mālik b. Dīnār, cites the following tradition from Anas: "God's messenger (God's peace and blessing be upon him!) said that God has a tablet of which one side is made of a red hyacinth, and the other side of a green smaragd. His stylus is light; with it He creates, with it He provides the means of subsistence, with it He gives life and with it He causes death, with it He gives a high position and with it He brings low, and with it He does whatever He wants every day and night."

5. Relying on the transmission of Saᶜīd b. Ǧubayr, Abū š-Šayḫ and aṭ-Ṭabarānī relate the following saying of Ibn ᶜAbbās (may God be pleased with both of them!): "God created a tablet from a white pearl, the two sides being made of a ruby and a green chrysolite. Its stylus is light, and its writing is light. And its width is the distance between heaven and earth. Every day He looks at it 360 times, while He creates and provides, gives life and takes it, gives a high position and brings low, and does whatever He wants."

6. And, through the intermediary of aḍ-Ḍaḥḥāk, Abū š-Šayḫ cites the following tradition from Ibn ᶜAbbās (may God be pleased with both of them!): "God's messenger (God grant him blessings and peace!) said that God created a tablet from a white pearl, the two sides of which are made of a green chrysolite, and the writing on it is light. Every day He looks at it 360

quote the following saying of God's messenger (God's peace and blessing be with him!): "Below God there are 70,000 veils of light and darkness. No one has heard anything about the beauty of those veils but his soul departed."

32. And from al-Qurṭubī Abū š-Šayḫ derives this tradition: "It reached us that between the Almighty and the nearest of His creatures there are four veils, and the distance between every two veils is like that between heaven and earth: A veil of darkness, a veil of light, a veil of water and a veil of white fire."

33. Further, Abū š-Šayḫ cites the following tradition from Wahb: "Between the angels who carry the footstool and the angels of the throne there are seventy veils of darkness, seventy veils of coldness, seventy veils of ice and seventy veils of light. The thickness of each of these veils is the distance of five hundred years. And from veil to veil the distance is five hundred years."

34. And Abū š-Šayḫ quotes Ibn ᶜAbbās as stating: "The heavens and the earth, in relation to the abysses behind them, where there is no heaven and no earth any more, are like a tent in relation to a desert. What would that tent amount to for someone from this earth?"

35. Based on a weak chain of transmission, Abū š-Šayḫ cites the following saying of Ibn ᶜAbbās (may God be pleased with them both)!: "From the seven heavens up to the throne there is a distance of 36,000 years."

36. ᶜAbd b. Ḥamīd, in his *Tafsīr*, and Abū š-Šayḫ quote ᶜIkrima as saying: "The Sun is one seventieth of the light belonging to the footstool. And the footstool is one seventieth of the light belonging to the throne. The throne is one seventieth of the light belonging to the veil."

22. Ibn Ǧarīr and Ibn al-Mundir cite Abū Mūsā al-Ašʿarī's saying that the footstool is the place of the two feet, and that it makes a creaking sound like that of a camel's saddle. — I say, his expression 'the place of the two feet' is a metaphor, an analogy with the kings of this world, as the report of aḍ-Ḍaḥḥāk clearly indicates.

23. Ibn Abī Ḥātim and Ibn al-Mundir, through the intermediary of aḍ-Ḍaḥḥāk, quote Ibn ʿAbbās (may God be pleased with them both!) as declaring: "If the seven heavens and the seven earths were spread out and then one connected with the other, still, with regard to the width of the footstool they would only be like the circle in relation to the deserts."

24. Ibn Ǧarīr, Ibn Abī Ḥātim and Ibn al-Mundir cite a saying on the authority of as-Suddī that the heavens and the earth are in the cavity of the footstool, and that the footstool is in front of the throne.

25. Ibn Ǧarīr, on the authority of aḍ-Ḍaḥḥāk, reports that al-Ḥasan (may God be pleased with him!) used to say: "The footstool is (that part of) the throne that is between the throne and the seventh heaven."

26. Relying on the transmission of Muǧāhid from Ibn ʿAmr (may God be pleased with both of them!), and also through the intermediary of someone else than Muǧāhid, Abū š-Šayḫ quotes the following tradition: "Truly, between the throne and the angels there are 90 veils: One of light, another one of darkness, then one of fire, and then another one of darkness."

27. And he quotes Muǧāhid as saying: "Between the throne and the angels there are 70,000 veils of light."

28. Furthermore, Abū š-Šayḫ mentions that according to Zurāra b. Abī Aufī the Prophet (may God's peace and blessing rest upon him!) asked Ǧibrīl (peace be on him!) whether he had seen his Lord. But he shuddered and replied: "As it is, between me and Him there are seventy veils of light. If I ever came close to the one nearest to me I would get burnt."

29. And in connection with a *ḥadīṯ* of Anas he brings a similar tradition.

30. Through the intermediary of ʿAmr b. Šuʿayb, who had it from his father, and he, in turn, from his grandfather, Abū š-Šayḫ cites the following tradition: "God conceals Himself from His entire creation through four things: Through fire and through darkness, then through light and through darkness, above the seven heavens and the highest ocean above all, below the throne."

31. Abū š-Šayḫ and Ibn Mardawayh, on the authority of Sahl b. Saʿd,

earth. Compared with it al-Bākī and whatever is below it are like a spring to the surface of the ocean.

15. Abū š-Šayḫ quotes Ḥammād as saying: "God created the throne from a green emerald; and He added four pillars of red saphire. Then God created a thousand tongues for it. And on earth He created a thousand nations. Every nation praises God with one of the tongues belonging to the throne."

16. Abū š-Šayḫ and Abū Nuᶜaym in his *al-Ḥilya*, with a weak chain of transmission, quote the following tradition from ᶜAlī (may God honour him!): "God's messenger (may God grant him blessings and peace!) said: 'The footstool is a pearl, and also the stylus is a pearl. The length of the stylus is seven hundred years, whereas the magnitude of the footstool is such that the people of knowledge do not know it.' "

17. Ibn Abī Ḥātim and Abū š-Šayḫ refer to ar-Rabīᶜ b. Anas concerning God's word: "And His throne rests on water." His explanation was: "When God created the heavens and the earth, He divided that water on which His throne rests into two parts: He placed one half under the throne, namely the overflowing ocean. Not a drop falls from it until the trumpet is being blown (i.e. Day of Resurrection). A kind of dew descends from it, and the bodies grow from that. God placed the other half below the lowest earth."

18. Ibn Abī Ḥātim and Abū š-Šayḫ, through the intermediary of as-Suddī, quote the saying of Abū Mālik that the footstool is under the throne.

19. Ibn Ǧarīr, Ibn Mardawayh and Abū š-Šayḫ report on the authority of Abū Ḏarr (may God be pleased with him!) that God's messenger (peace and blessings on him!) said: "Oh, Abū Ḏarr, the seven heavens are in comparison with the footstool nothing but a circle placed on the ground of a wide desert. And the excess of the throne over the footstool is like the excess of the wide desert over that circle."

20. Ibn Ǧarīr quotes a saying of aḍ-Ḍaḥḥāk to the effect that His footstool which is placed beneath the throne is of that kind on which the kings put their feet.

21. On the authority of Ibn ᶜAbbās (may God be pleased with both of them!) al-Firyābī, Ibn Abī Ḥātim, Ibn al-Munḏir, aṭ-Ṭabarānī and al-Ḥākim in his *al-Mustadrak* — authenticating it in accordance with the stipulation of the masters — quote the following tradition: "The footstool is the place of the two feet, and the throne is such that no one can determine its measure."

(God's blessing and peace be with him!) said: "The throne is of a red hyacinth. One of the angels looked at it and its magnitude. Then God revealed to him: 'Truly, I have placed in you the power of seventy thousand angels, each having seventy thousand wings, so fly!' — And the angel flew with the power given to him and the wings, just as God wanted him to fly. He stopped, looked at his place, and he had not budged at all."

10. And he quotes Muǧāhid as saying that the footstool, in relation to the throne, occupies only as much space as a circle on the ground of the wide desert.

11. From ar-Rabīʿ b. Anas he takes the following statement concerning the word of the Most High 'And the roof raised high': "This is the throne. 'And the overflowing ocean': This is the upper water which is under the throne."

12. Concerning God's word 'And the overflowing ocean', Saʿīd b. Manṣūr, ʿAbd ar-Razzāq, and Ibn Abī Ḥātim mention that ʿAlī b. Abī Ṭālib (may God be pleased with him!) said: "An ocean under the throne."

13. Ibn Abī Ḥātim quotes Kaʿb as saying: "Truly, the heavens are in relation to the throne like a lamp suspended between heaven and earth."

14. As Ibn Abī Ḥātim reports on the authority of 'Umar b. Yazīd al-Baṣrī, it is mentioned in the prophecies of the prophet Hārūn (blessings and peace be on him!) that this ocean of ours is a bay belonging to the Nīṭaš, and the Nīṭaš is behind it and surrounding the earth. The earth and its seas are in comparison with the Nīṭaš like a spring to the surface of the ocean. Behind the Nīṭaš there is the Qaynas, surrounding the earth. The Nīṭaš and whatever is below it stand in the same relation to this Qaynas as a spring to the surface of the ocean. Behind the Qaynas there is al-Aṣamm, surrounding the earth. Compared with it the Qaynas, and whatever is below it, are like a spring to the surface of the ocean. Then, behind al-Aṣamm, there is al-Muẓlim, surrounding the earth. Compared with it al-Aṣamm and whatever is below it are like a spring to the surface of the ocean. Further, behind al-Muẓlim, there is a mountain of diamond, surrounding the earth. Compared with it al-Muẓlim and whatever is below it are like a spring to the surface of the ocean. Behind that diamond, there is al-Bākī, which is sweet water; it surrounds the earth. God gave the command that one half of it should be beneath the throne. But it itself had the will to stay united. So God chided it, and it was weeping, begging God for pardon. The diamond and whatever is below it stand to it in the same relation as a spring to the surface of the ocean. Then, behind it, there is the throne, surrounding the

The First Chapter

What is mentioned concerning the throne and the footstool

1. Words of God Most High: "And He is the Lord of the great throne".

2. And again: "His footstool extends over the heavens and the earth".

3. Ibn Abī Ḥātim, in his *Tafsīr,* and Abū š-Šayḫ, in his *Kitāb al-ᶜaẓama (Book of Greatness),* produce the following tradition on the authority of Wahb b. Munabbih: "God Most High created the throne from His light. The footstool is attached to the throne. And all the water is inside the footstool, and it rests on the wind. — Around the throne there are four rivers: A river of glittering light, a river of blazing fire, a river of snow so white that the eyes become radiant under its influence, and a river of water. The angels are standing in these rivers, praising God Most High. — And the throne has as many tongues as there are tongues in all creatures. With those tongues it praises God and repeats His name."

4. Ibn Abī Ḥātim and Abū š-Šayḫ, on the authority of Saᶜīd aṭ-Ṭā'ī, cite this tradition: "The throne is a red hyacinth."

5. Further, Saᶜīd b. Manṣūr, Ibn Abī Ḥātim and Abū š-Šayḫ, on the authority of Muǧāhid, quote the following tradition: "The heavens and the earth contain only as much of the throne as a circle holds of the ground of the wide desert."

6. Abū š-Šayḫ quotes Ibn ʿAmr as saying:
"God created four things with His hand: Adam, the throne, the stylus and the garden of ᶜAden. And He said to the other creatures: 'Be!' — And they came into existence."

7. And, on the authority of Ibn ᶜAbbās (may God be pleased with them both!), Abū š-Šayḫ and Ibn Abī Ḥātim produce the following tradition: "No one can correctly assess the magnitude of the throne except He who created it. As for the heavens, they are, when compared with the creation of the Merciful, like a dome in relation to a wide desert."

8. Aṭ-Ṭabarānī and Abū š-Šayḫ, on the soundly established authority of ʿAbdallāh b. ᶜAmr b. al-ᶜĀṣ, quote the saying that the throne is encircled by a snake, and that revelation descends as along the links of a chain.

9. Abū š-Šayḫ relates on the authority of aš-Šaᶜbī that God's messenger

II. The Translation

THE RADIANT COSMOGRAPHY

CONTAINING THE COSMOGRAPHY OF TRADITION

By the Master Ǧalāl ad-Dīn as-Suyūṭī

The list of its chapters:

In the name of God, the Merciful, the Compassionate!

Praise be to God, Who taught us what we did not know!
And God's blessing and peace on our lord Muḥammad, on his family, and on his Companions.

And then: This is a book on cosmography, which I have compiled from the traditions and executed on the basis of the old narrations. It was my goal that those with intelligence might rejoice and those with eyes take heed.

I gave it the title: "The Radiant Cosmography containing the cosmography of tradition".

And I ask God for a good intention and a pleasing conclusion!

inserted *hamzas* wherever they would be used in modern writing and have treated the *wāws* and *yās* accordingly. Only when the meaning of the word could be affected, as in the case of *hawā'* (= air) and *huwan* (= abysses), have I expressed my hesitation in the apparatus or more explicitly in the commentary.

The following signs were used:

\+ An addition in the manuscript(s) mentioned.

— An omission in the manuscript(s) mentioned. A single word omitted is repeated after the (—) sign to assure clarity. If more words or whole lines are omitted, the limits are indicated with the same numbers, e.g. 4 .... 4.

(hākaḏā): If agreement of the manuscripts has to be explicitly indicated.

2 × : A word is repeated unnecessarily.

(fī l-ḥāšiya): A marginal note.

The manuscript München 133, which is mentioned in GAL II, 148 nr. 66, is actually a compilation by Ibrāhīm al-Qaramānī al-Āmidī, whose works were discussed in the beginning of the present study.

Some remarks on technical details of the edition

The manuscripts usually do not number the chapters, and never the paragraphs. Such numbers have been inserted for easy reference in the commentary. They cannot disturb the flow of the text since it consists of individual fragments collected from widely separate sources. Moreover, the chapter headings including the formula *mā warada fī* do not occur in all manuscripts examined and are, therefore, not part of the original text. For the sake of uniformity they have been used throughout in the same fashion. Similarly I have employed the eulogies after names, which also differ quite often, uniformly and consistently by following the practice of manuscript P_2. It is most consistent itself.

To facilitate the printing of the Arabic text, and especially the apparatus, the manuscripts used for the edition were denoted with Arabic letters. They correspond to the letters used above as follows:

A_1	=	Aya Sofya K. 2681 (dated 988 H./1580 A.D.)	اا
A_2	=	Aya Sofya K. 2680 (not dated)	اب
B_1	=	Bağdatlı Vehbi Ef. 849 (dated 1059 H./1649 A.D.)	با
B_2	=	Bağdatlı Vehbi Ef. 2102/3 (dated 1077 H./1666 A.D.)	بب
B_3	=	Bağdatlı Vehbi Ef. 656/3 (not dated)	بث
P_1	=	Princeton Univ., Garret Coll. 993 (dated 1012 H./1603 A.D.)	جا
P_2	=	Princeton Univ., Garret Coll. 991 (dated 1088 H./1678 A.D.)	جب
S	=	Şehid Ali Paşa 2731/1 (dated 963 H./1556 A.D.)	س
U	=	Istanbul University A. 1476/11 (dated 1037 H./1627 A.D., but uncertain)	و

The manuscripts vary greatly in orthography; without saying so in every case, I have employed the modern practice throughout. Thus I have

Istanbul, Reisülküttab 1157/43.
Istanbul, Süleymaniye 708/21.
Istanbul, Süleymaniye 1030/23 (in very bad condition).
Istanbul, Ş. Esad Ef. Medresesi 182/4.
Istanbul, Hacı Mahmud Ef. 778/5.
Istanbul, Halet Ef. 822/3.
Istanbul, Aya Sofya K. 2682.
Istanbul, Aya Sofya K. 2683.
Istanbul, Antalya-Tekelioğlu 897/2.
Istanbul, Pertev Paşa 608,2.
Istanbul, Rşd. 988/18.
Istanbul, Rşd. 1004/16.
Istanbul, University A. 1634.
Istanbul, University A. 2952.
Istanbul, University A. 6136.
Bursa, Haraççioğlu nr. II — 1213/3.
Konya, Yusuf Ağa 7250/1.

Additional manuscripts of *Al-hay'a as-sanīya* mentioned in the catalogues and bibliographies:

Istanbul, Selim Ağa Mjm. 161/4.
Istanbul, Asaf III., 250, 852.
Kütahya, Zeytinoğlu 5193.
Kütahya, Vahit Paşa Il Halk Kth. 933.
Manisa, Il Halk Kth. 1241; 297,2 = 927.
Princeton, University 992.
Vienna, National-Bibl. 2368.
Berlin, 5697/8.
Gotha, 52,4; 1383.
Ind. Office, 1037.
British Mus. Suppl., 1226,3.
Alger, 1556.
Cairo, I, 337; I, 448; VII, 146; [2]I, 160.
Hamburg, Orient. Seminar, 15,1.
Alex. Fun., 41,3.
Patna II, 392, 25791; II, 492, 26521.
Paris, 4253,3.
Stockholm, 77 b.
Brill — H., 615.
Beirut, 200.
Rampur, I, 125, 433; II, 114, 436.

a good original, but tried occasional corrections when he saw fit. This copy, therefore, was used mainly to corroborate the readings of the older manuscripts and to check the history of the text.

B_2: This is another, partial, copy of as-Suyūṭī's treatise in the Bağdatlı Vehbi Efendi Collection. Its catalogue number is 2102/3, i.e. it is the third treatise in a volume containing several others. It measures 212 × 152 mm, and the written surface covers 158 × 96 mm. The copy is limited to the folios 20-26, having 28 lines to the page. The writing style is an easily readable Nasḫī. The copy was made by Yūsuf b. Sulaymān an-Naqqāš al-Ḥanafī aš-Šāmī in the year 1077 H./1666 A.D. This is not a complete copy of as-Suyūṭī's treatise: The whole section from III, 11 to IV, 45 is left out; and, moreover, many individual paragraphs have been omitted, apparently by way of selecting the preferred traditions. Such omissions have not been specifically marked in the apparatus, since this serves the fixation of the original text, not the characterisation of individual manuscripts. This particular copy has been used for the present edition principally as an aid in deciphering difficult passages; and occasionally its corrections or suggested interpretations have been considered for a better understanding of the text.

B_3: This is the third copy in the Bağdatlı Vehbi Efendi Collection which was used for the present edition. Its catalogue number is 656/3, i.e. it is the third treatise contained in this volume; it measures 202 × 139 mm and the written surface covers 145 × 97 mm. The copy fills the folios 99 to 118, having 21 lines on a page. The writing style is Taᶜlīq; neither the name of the copyist nor the date is mentioned. Though it appears to be somewhat younger, it generally agrees with the oldest copies. Its variants often appear to be the products of a copyist's attempt to improve the text with his own corrections. This copy, therefore, has been used cautiously; on the whole, it only has served as confirmation of other manuscripts.

The following manuscripts were examined briefly, but not selected for this edition because they proved to be late copies or so carelessly executed that nothing new could be expected from them:

Istanbul, Bağdatlı Vehbi Ef. 2103/14.
Istanbul, Esad Ef. 3545/10.
Istanbul, Haci Beşir Ağa 655/5.
Istanbul, Lala Ismail 678/11.
Istanbul, Lâleli 3736/2.
Istanbul, Lâleli 3767/3.
Istanbul, M. Hafid Ef. 191.
Istanbul, Mihrişah S. 335/3.

This copy, too, was acquired from Brill, Leiden, in 1900. It was made by the copyist Nūr ad-Dīn b. Nūḥ in the year 1088 H./1678 A.D., i.e. rather late. It is written in a rather careless Nasḫī, which sometimes makes reading difficult. The pointing is fairly common, but often not trustworthy. Inspite of the use of catchwords and coloured entries, the arrangement is rather poor. The manuscript measures 203 × 145 mm, the writing covering 155 × 93 mm; it has 20 folios with 21 lines to the page. Since this copy employs the eulogies after names with the greatest consistency, I have generally followed its practice. In addition, I have used its table of contents. But its variant readings were almost always relegated to the apparatus; for they appeared to stem from a faulty original, associations or mistaken interpretations or corrections of the copyist. Occasional marginal notes and the variant in text XI, 6 proved useful, however, as they shed some light on the contemporary interests of the readers. Moreover, the fact that this copy regularly adds *wa ᶜağā'ib* (= and the wonders...) to the head-lines shows that by that time the *Hay'a as-sanīya* had become embodied in the *ᶜağā'ib al-maḫlūqāt*-literature. Hence the intention of the author of restoring *sunnī* cosmology was no longer understood or thwarted.

U: This is one of four manuscript copies in the library of Istanbul University. Its catalogue number is A. 1476, 11; it is the eleventh treatise in one volume, in which it covers the folios 38 r—55 r, with 25 lines to the page. It is written in a fairly clear Nasḫī. The name of the copyist is not mentioned; and no date is given in the treatise itself. But since it was bound together with another treatise which appears to be in the same hand and which was copied in the year 1037 H./1627 A.D., it may be conjectured that the copy of *Al-hay'a as-sanīya* was made around that time, too. It was obviously made with care and attention, especially to the correct forms of the names. However, this concern for correctness appears to have resulted in occasional changes of the original. Thus the manuscript was used only for confirmation of variants in the older ones, but with caution.

B_1: This is the best copy of *Al-hay'a as-sanīya* among four others kept in the Bağdatlı Vehbi Efendi Collection of Süleymaniye Library in Istanbul. It bears the catalogue number 849. This volume measures 205 × 149 mm, and the text of the treatise covers 25 folios, with 23 lines to the page. It is written in a Nasḫī of the Arab style by an unknown copyist. The date is given as the year 1059 H./1649 A.D. This copy appears to be fairly trustworthy; generally it agrees with the older manuscripts S and A_1. The variants it offers indicate that the copyist had

lines to the page. The copy was probably made for a bibliophile because it is manifest that much attention was given to the aesthetic appearance of the book. Thus the head-lines are beautifully displayed in colours, and the volume has an expensive binding. — Fortunately the copyist was equally careful with the text. Hardly any omissions, skipping of words and lines, can be pointed out. The variant readings indicate that the copyist paid attention to the meaning of the text and its grammatical correctness, too. For he occasionally makes minor corrections. Judged as a whole, this is the most valuable copy of the *Hay'a as-sanīya*.

A_2: This is the longest copy of the treatise I have seen. It fills 88 folios, with 9 lines to the page, and is bound as a separate volume, which has the appearance of a book of piety or meditations (perhaps it was used as such). Catalogued as the number K. 2680, it is included in the Aya Sofya collection of Süleymaniye Library in Istanbul. — Neither the name of the copyist nor the date of his work is mentioned. The copy is written in a clear Nasḫī. Since it is written broadly, without economizing on space or paper, it is the most legible copy I have seen. In addition, the chapter headings, displayed in red and blue, give the treatise a pleasant arrangement. Unfortunately, the copy is less trustworthy in details than agreeable in appearance. The reason is probably that it was made from an original that was not nearly as legible and, moreover, faulty. This copy, therefore, was handy in the preparation of the edition, but its variants were treated cautiously.

P_1: This is the oldest of three copies of as-Suyūṭī's *Al-Hay'a as-sanīya* kept in the manuscript library of Princeton University (Garret Collection); its catalogue number is 993. Previously it belonged to the collection of Brill, Leiden, from which it was acquired in 1904. The copy is written in a clear, but occasionally careless Nasḫī. It is generally pointed. Its date is given as 1012 H./1603 A.D., but the name of the copyist is unknown. The treatise covers 18 folios, with 21 lines to the page. Catchwords are employed, and the headings are displayed in red colour. Nevertheless, as many omissions of words and short parts of the sentences indicate, the copyist cannot be said to have applied great care. But his original must have been good, since his copy is nearly always in agreement with the best manuscripts described above. A table of contents is attached, but it probably is of a later date and written without care. The measurements of the manuscript are: 210 × 156 mm, and writing covers 140 × 100 mm.

P_2: This is another copy of as-Suyūṭī's treatise now kept in the Garret Collection of Princeton University. Its catalogue number is 991.

brief interpretations of difficult passages, marginal notes and sometimes selections of what their copyists considered important, presented clues concerning the reception of this treatise by contemporary scholars. It has not been attempted to conjecture the stem of the manuscripts because the copies examined were too widely divergent. For such traditional materials, compiled at a late date, a conjectured stem does not promise to be beneficial any way, since the copyists may have been influenced by versions of traditions they had memorized from other sources. — In what follows I first describe the manuscripts I have used for my text edition; then I list those I have examined but excluded as less useful, and finally additional ones which I found mentioned in various catalogues and bibliographies. With the exception of the two Princeton manuscripts I have been able to collate the manuscripts themselves, not only their copies.

S: The oldest and one of the most reliable manuscript copies of the *Hay'a as-sanīya* used for my edition, is kept in the Şehid Ali Paşa collection of Süleymaniye Library in Istanbul. It bears the catalogue number 2731/1, which means that it is the first treatise bound together with others in the volume 2731. Its measures are 178 × 132 and 121 × 76 mm. The copy was made in the year 963 H./1556 A.D., i.e. 52 years after as-Suyūṭī's death, by Muḥammad b. ᶜUmar. It is written in a clear Nasḫī, imitating the old Arab style of writing, and has 32 folios with 19 lines to the page. — It is obvious that the copyist applied great care in the execution of his work. Thus the diacritical points, and often also the vowel-signs, are diligently inserted. But there is an omission of five lines at the end of chapter seven and in the beginning of chapter eight, which is probably due to oversight. However, the book-binder was not equally diligent: After the text VII, 10 about four pages of as-Suyūṭī's *Al-hay'a as-sanīya* are left out and twelve pages from a different treatise are inserted. — The chapter headings are carefully marked off from the rest of the text. Characteristic of this copy is the ending of each chapter with a formula granting Allāh the fullest knowledge *(wa Allāh aᶜlam)*, which may indicate some reservation about the preceding teachings. — Because this copy proved to be not only the oldest, but also the most trustworthy, I have generally given preference to its readings.

A_1: This manuscript was copied 25 years after S, namely in the year 988 H./1580 A.D.. It is part of the Aya Sofya collection of Süleymaniye Library in Istanbul. It is the first treatise in the volume bearing the number K. 2681. The copyist was a certain Muḥammad b. ᶜAbd Qadr ᶜAlī al-Barlassī. He wrote it in a very neat Nasḫī, on 31 folios with 19

PART B

THE TEXT

I. The Arabic text of as-Suyūṭī's *Al-hay'a as-sanīya fī l-hay'a as-sunnīya*

THE MANUSCRIPTS

The number of hand-written copies of a medieval treatise testifies to its popularity and influence among its contemporary readers. At the outset of my research on the *hay'a as-sunnīya* it therefore came as a surprise to me that of as-Suyūṭī's *Al-hay'a as-sanīya* such a great number of copies is still available in the various manuscript libraries of the world. My list of over sixty extant copies is probably not even complete; it necessarily depends on access to libraries and catalogues, and most probably more copies will be added in the future. Even so, it illustrates the place this treatise must have had in contemporary intellectual life.

The great number of extant copies makes it impossible to use all of them for an edition of the text. Perfectionism, moreover, is quite out of place. It could only obstruct the work the sole goal of which is to establish the correct, unaltered text intended by the author. This goal, I am confident, has been reached with the nine manuscripts I have collated. The oldest ones were copied only some fifty to seventy years after the author's death. And none of them reveals grave textual problems, such as the presence of different versions of the treatise or major alterations. It is, therefore, quite unlikely that an examination of more manuscripts, and even the discovery of older ones, would change the text, in essential points, which is presented in the following edition. As it is a compilation from a number of earlier books used also by other authors no real surprises are to be feared.

The four or five oldest manuscripts would have sufficed to establish the text. But the younger ones proved useful, too: They often helped to decipher illegible words in the oldest ones; but more importantly, their

explicitly the exterior rivers, clearly distinguishing them from the two hidden rivers of Paradise. Nevertheless, in this text all four issue from the stem of the lotus-tree.

As far as the Nile alone is concerned, it is the result of a mystified journey of discovery to its source that "it flows down from Paradise", but is (i.e. at least a fourth part of it) a river on the surface of the earth. A man, said to have come to Egypt fleeing from the anger of his king, was so fascinated by the wonders of the Nile that he spent nearly sixty years travelling along its banks in search of its source. Then he reached "a green sea"; he was instructed to cross it on the back of a giant animal, apparently the arch-enemy of the Sun whom it tries to devour at its rising and setting. After having crossed to the other side of the "green sea", he had to traverse the lands of iron, copper, silver, and finally gold.

Finally he came to a "wall of gold", with four doors. Water was flowing down from the top of that wall into the four doors: Three parts were running into the earth, and the fourth part flowed along the surface of the earth. This part turned out to be the Nile. About to climb that wall, he was stopped by an angel and informed that the Nile "flows down from Paradise" (XIII,4). — Here, of course, human knowledge comes to an end. But even though the "discoverer" reaches Paradise, the story must have stirred human curiosity and the will to repeat such a journey. And that is probably the only scientific part of it.

A more down-to-earth text is quoted in the last fragment of this chapter. ʿAbdallāh b. ʿAmr suggests an "explanation" of the periodic flooding of the Nile; but that event, too, is ultimately of Allāh's own doing. For it is He who made all rivers, from East to West, subservient to the Nile, "the lord of the rivers" (XIII,5). Thus it is He, too, who commands every river to sufficiently enlarge the Nile and finally to return when He wants it to subside. However, Allāh's use of the subordinate rivers seems to be a step towards a secondary causality — and a new invitation to man to verify this theory.

To sum up: The harvest of scientific elements in *Al-hay'a as-sanīya* is doubtless rather meager. But the many loose ends and the numerous pieces of diverse, often contradictory theories and explanations of the cosmic, meteorological, natural and geographical phenomena make it a store-house of ideas and scientific stimuli. It is to these elements that as-Suyūṭī wants contemporary science to revert — that is the historical significance of his treatise *Al-hay'a as-sanīya*.

contain some explanation of the earthquake as well. The text quoted is, again, ascribed to Ibn ᶜAbbās, the greatest authority in Tafsīr.

Ibn ᶜAbbās' explanation is rooted in the theory of the mountain Qāf which surrounds the earth; in this particular text it is connected with the rock deep down under the earth. In this way, it seems, every region, and even every town in such a region, can be shaken through movement of the mountain Qāf. Hence Allāh can cause an earthquake in any town by giving His command to the mountain Qāf. But no details are given about the nature of the connection between a region or town with the rock deep beneath the whole earth. Besides, it remains unexplained, as in most Greek theories, why the whole earth is not affected directly by every earthquake.

The problem remains also unsolved in a similar explanation of the earthquake which occurs earlier in *Al-hay'a as-sanīya* (III,8): Underneath the earth is a fish that carries it. Whenever this fish stirs, an earthquake occurs. In this theory, obviously, no distinction is made between the region affected by the earthquake and the rest of the world, as it features in that of Ibn ᶜAbbās. The theory thus closely resembles that of Thales who explained the earthquake as the shaking of the earth as a result of the movement of subterraneous water.[214] Apparently only Metrodor of Chios had a theory of earthquakes that allowed him to do justice to the local character of many such catastrophes.[215]

13) *The Nile*

Besides the mountains, the rivers and their sources generated much interest among geographers up to recent times when no new ones were to be discovered any more. The great rivers of the ancient world had a degree of fascination for people which is hardly understandable today. This fascination is most likely the chief reason why the great rivers, either totally or in their origins, are often ascribed to Paradise. Sometimes these rivers are identified with, and sometimes only compared with the rivers of Paradise: Thus *Al-hay'a as-sanīya* has one tradition from Abū Hurayra (XIII,2) that names the Nile and the Euphrates as two of the four rivers of Paradise; another text from Kaᶜb (XIII,3) may only imply an external correlation with the paradisic rivers of honey (the counterpart of the Nile), milk, wine, and water. Another tradition, centering on the ascent of the Prophet to the seventh heaven, calls the Nile and the Euphrates

[214] O. GILBERT: *Die meteorologischen Theorien* 295.

[215] Ibid., 304.

chapter XI; for it is said to be surrounding the earth (XI,1). Kaᶜb, in the following fragment, apparently thinks of the same mountain when he assumes "the veil", behind which the Qur'ān lets the Sun disappear (Sūra 38,32), to be a green mountain. He also states that "it surrounds the creatures". But only the first mentioned fragment has the further detail that this mountain surrounding the earth carries "the sides of heaven".

The material from which this mountain is composed is mentioned with special care: The first fragment says that it is an emerald; and the second calls it a hyacinth. Its colour plays a special role; for the sky derives its green colour from this mountain, and the sea receives it from the sky. But Ibn ᶜAbbās reverses their roles: The sea has the green colour first, because it is placed on a green rock. This greenness is then reflected to the sky, or perhaps it was thought to reach the sky through the transparent sea. — A mountain of precious metal was already mentioned in the first chapter of *Al-hay'a as-sanīya*, where the various oceans are enumerated: "Behind the *Muẓlim* there is a mountain of diamond, surrounding the earth" (I,14). Probably this is derived from a common notion of the ancients, because Aristotle and Poseidonios speak of a "silver mountain", though in a different context.[213]

The mountains on earth are so amazing that even the angels are said to have marvelled at their creation. But their imposing force has a place in the harmony of this world: After the Creator has stretched out the earth, He placed the mountains on it, so that it would remain stable (XI,4,6). This idea, probably, has its root in the experience of desert people who see the sand dunes shifting and changing the surface of the low-lying land; but the mountains are always found on the same spots and without noticeable alterations. That the whole earth moves, does not seem to be implied.

Only Abū Qubays, the mountain on the eastern edge of Mecca, is mentioned by name. Probably due to its location it became known among the early Muslims as the first mountain to be placed on earth (XI,5). This may imply that Allāh began His creation in Mecca.

12) *The earthquake*

As-Suyūṭī's *Al-hay'a as-sanīya* also contains a special chapter on the earthquake, but it includes only two fragments; and the second appears to be so much like the first that the compiler did not even quote it in its own words. He must have felt that a work on cosmography had to

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213 See: E. Honigmann: *Die sieben Klimata und die Poleis Episemoi* 168.

by a minimal amount (XII,8). But the most complete account of geographical dimensions is derived from Ḥassān b. ᶜAṭīya (d. probably 181 H./797 A.D.). He gives some rather summary figures for the main sections of our earth: "... the extension of the earth is 500 years. From that its seas cover a distance of 300 years, the deserted area extends over 100 years, and the cultivated lands measure 100 years" (XII,3). As discussed above, the expression "year" probably stands for "day's-journey" (the fact that the geographer Iṣṭaḫrī gives the extension of the earth as 400 *marḥalas*, i.e. day's-journeys, suggests the same interpretation).[212] But more curious is perhaps Ḥassān's estimate about the proportion of land and sea on the one hand, and cultivated and uncultivated lands of the other:

A similar proportion is also established in fragment III,48. It is based on the population distribution on our earth: "The world has seven regions. The Gog and Magog live in six regions, and the rest of mankind lives in one region" (III,48). — The division of the world into seven regions is almost common place in ancient and medieval geography. Usually it is based on the ancient, originally probably Babylonian, division of the inhabited world into seven *climata;* but usually they are counted in a South-North direction, while the underlying idea here seems to be different.

Some fragments on the sea are of interest mainly because of their strangeness. Thus we learn that "the sea comes forth from a water-skin" (XI,6), or it is said that "the sea is a water-skin in the hand of an angel" (XI,7). This queer analogy is probably chosen to convey the idea that the sea is limited by definite bounds, or that it is "an enclosed ocean" in the sky, under the throne, moving around with great speed, yet not losing a drop of water. — Another fragment (XI,4) contains Ibn ᶜAbbās' answer to an inquiry about ebb and flow. In his view the explanation is easy: An angel is in charge of the ocean; he causes ebb and flow whenever he lifts his foot out of the waters or submerges it.

11) *Mountains*

A separate chapter of *Al-hay'a as-sanīya* is devoted to the mountains, although the compiler did not have much material at his disposal. Earlier a fragment was discussed about the mountain behind which the Sun rises; its height was said to be 80 farsaḫs (= 480 km). Probably this mountain is identical with the mountain called Qāf in

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212 See: A.D. MORDTMANN (transl.): *Das Buch der Länder von Schech Ebu Ishak el Farsi el Isztachri* 3.

pieces are important as components for the later structures. The article on geography in the new edition of the *Encyclopedia of Islam,*[211] already mentioned above, refers to the Qur'ān, the Prophetic Tradition and ancient Arabic poetry as sources for reconstructing the oldest geographical knowledge among the Muslims. The author asserts that "many of these notions must have originated from Babylonia in ancient times or were based on Jewish and Christian traditions and indigenous Arab sources." He even admits that "some of the traditions exercised deep influence on Arab geographical thought and cartography." But, then, with a curious unproven theory of concoction he destroys his own foundations: "... it seems that these traditions which reflect the ancient geographical notions of the Arabs were concocted in a later period to counteract the scientific geographical knowledge that was becoming popular among the Arabs of the period, although they were presented as authentic knowledge by some geographers in their works." Whatever this juggling of inconsequential arguments is supposed to achieve, the period actually referred to, and in general the factors involved in the development of Arabic geography, remain uncertain. The traditions must be examined as they have come down to us, and in the framework of the times to which they belong. The fact that they were included in the composition of Abū š-Šayḫ, a conscientious early scholar, puts them on much safer ground.

It was shown above how the earth, or rather the seven earths, fit(s) into the whole universe. This scheme is further elaborated in the fragments that refer to the old Arabic geography. Thus, according to Wahb, the counterpart to the seven earths are seven seas; but the earth in the singular is said to rest on the back of the fish called Bahamūt (XII,2). In another fragment (XII,1) it is specified that "creation", i.e. probably the earth with its various inhabitants, is surrounded by a sea; and then, alternating with air, seven more seas, eight in all, are enumerated. A similar theory describes the seas of water alternating with seas of fire (XII,5; cf. 9); but there are only seven of each, and not one behind the other, rather one below the preceding one.

Most interesting from a geographical point of view are those fragments that deal with the dimensions of the earth(s) and the seas. Both parts of the world are seen in proportion to each other, and in the view of Kaᶜb al-Aḥbār "the sea exceeds the earth by the holding rope of a bull." How much that is supposed to be will be hard to say; probably he meant

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211 EI² II, 576.

this point. One such explanation of lightning by Abū Hurayra sounds almost mechanistic: "Lightning is the colliding of hailstones" (VIII,18). This may be wrong, but at least it leaves out the activity of angels. Another explanation brings to mind the fact that the heavenly sphere in early cosmology, since Babylonian times, consists of "enclosed water"; so it is not amazing that lightning is described as "the glittering of the water" (VIII,19). Furthermore, if the celestial ocean, situated beneath the throne, is assumed to be an ocean of fire, then the lightning strokes, dropping down from that ocean, should also be fire (VIII,21; cf. 20). Thus there are at least a few instances of meteorological theories based on a measure of rational thinking, rather than myths.

Thunder and lightning were not merely individual phenomena, but linked with other natural processes as well. Thus there is an interesting saying of Kaᶜb al-Aḫbār: Thunder and lightning apparently had become so rare during his time that he feared both were about "to emigrate to Syria, so that there will be no thunder or lightning except between al-ᶜArīš and the Euphrates" (VIII,22). Most likely there was a dry-spell in his province, and the lack of thunder and lightning was linked to it.

Thunder and lightning, in the view of these early Muslim cosmologists, actually served a useful purpose. This can be gathered from Ḫālid b. Yazīd's theory that sea-water was made sweet through thunder and lightning (VII,30). Apparently he believed that under the influence of extreme heat the salt would fall out. Nevertheless, he was convinced that water from the sea could not produce vegetation, although he does not tell us the reason for that. — In general it must be stated that our texts do not bear out the often repeated assertion that meteorology was the special province of early Muslim scholars. But many fragmentary theories or half-answers were offered that could stimulate further interests. Eventually, when more complete treatises became available through translations from other languages, they found the ground prepared. As a matter of fact, many views of Greek philosophers may have resembled those of the early Muslim scholars so closely that they hardly could be suspected as being foreign.

10) *Earth and seas*

The rest of the fragments collected in AS-SUYŪṬĪ's *Al-hay'a as-sanīya* preserve some of what must be the earliest pieces of geographical knowledge in Arabic literature. Like everything else in this book, it is quite fragmentary indeed. Nevertheless, since the historian of science is interested above all in the gradual development of theories, even these

Most surprising is how often an angel plays a central role in these explanations, notably in explaining thunder.

Repeatedly thunder is described as an angel "in charge of the clouds" (VIII,3); he drives the clouds wherever Allāh wants, either with his urging voice and lances of fire (VIII,3), or by reciting "the formula of praise and exaltation" (VIII,5; cf. 4 and 8), inspite of the fury of thunder and lightning. Even a comparison with the song of the camel driver occurs (VIII,4), or with the shepherd's call for his sheep: In the same fashion the angel 'thunder' is said to call "the clouds" (whatever that may mean in fragment VII,13). Elsewhere thunder is ascribed to Allāh Himself: Thunder is Allāh's best speech, and lightning is His best laughter (VII,7). — An almost modern explanation of thunder is handed down from Ibn ᶜAbbās (VIII,15): When the angel's urging grows more intense, "the clouds press against each other and collide for fear of him. Then thunderclaps issue from them." — At the angel's instruction, too, the clouds drop the right amount of rain (VIII,7).

While thunder is directly identified with the angel driving the clouds, lightning usually is explained as an instrument of this angel: It is either an angelic glance (VIII,11), or the whip of light which the angel uses on the clouds (VIII,14), or a lance of fire (VIII,9; cf. 12). Once it is even said that the lightning strokes are the fire-brands inside the angel which he scatters around in his anger (VIII,6), or the radiance of an angel (VIII,16), which sounds similar.

In one strange fragment, however, lightning is identified as an angel with four faces: The face of a man, that of a bull, that of an eagle, and that of a lion. When he snaps his tail, he brings forth lightning (VIII,17). This is a likely confirmation for the possible conjecture — because of the frequent identification of thunder with an angel — that this angel was a god in pre-Islamic Arabia.[209]Thus this identification originally may have been an attempted Islamisation of old pagan notions, or even of images and sculptures. The same may hold good for lightning: Its symbol occurs frequently in South Arabian inscriptions.[210] Instead of reviving an old scientific or pre-scientific tradition as-Suyūṭī, therefore, may have handed down only thinly veiled ancient pagan ideas.

However, several fragments are of a different nature. Although one will hardly call them scientific, they at least fit better into the cosmological system(s) that emerged from the fragments studied up to

[209] See: M. Höfner: *Die Stammesgruppen* 505.

[210] Ibid., 504.

that the ancient Arabs for generations built up a store of such meteorological observations centering on the colours of the clouds.

(c) Effects of rain

In Arabia rain was greeted as a special gift from heaven that produced all kinds of good effects (VII,23). Thus al-Ḥasan, when looking at the clouds, would simply say: "By God, in them is your sustenance" (VII,24). But the result of rains, they must have observed, was not always the same; that depended on the degree of goodness their nature was given in Paradise (VII,29), not simply on the amount of water.

Apparently the effects of rain on dry land were so miraculous for these people that, in addition to water, the seeds, too, were believed to come down from heaven (VII,5). Ibn ᶜAbbās goes so far as to suggest that the curious observer may spread out a leather mat to see the seeds for himself. One wonders whether he ever tried the experiment himself (VII, 28). He also knows that "God creates the pearls in the pearl-oysters from rain. The pearl-oysters open their mouths during the rain; and the big pearl is made from the big drop (of rain), and the small pearl is made from the small drop" (VII, 19; cf. 20).

On dry ground the effect of rain is similar: Every drop brings forth a plant (VII,20). And not only plants shoot up after a rainfall, some companions of Ibn ᶜAbbās noticed that after a nightly rainfall their camp-site was teeming with green frogs, in a desert surely a surprising discovery. In answer to their inquiry they were instructed that these animals came down from the celestial ocean filling the lowest heaven and the interval between it and the next heaven. For in it, Ibn ᶜAbbās believes, are the same animals as in the sea on earth (VII,33; cf. 34). This is probably as good an explanation for the sudden appearance of frogs as the theory of the "*generatio spontanea*".[208]

9) *Thunder and lightning*

Already in the Qur'ān thunder and lightning, among the meteorological phenomena, receive a large share of attention; and as-Suyūṭī can begin his chapter on them with two Qur'ānic allusions to both. The fragments following thereafter bring diverse explanations or descriptions of the effects thunder and lightning are believed to produce.

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[208] Cf. E. WIEDEMANN: "*Zur Lehre von der generatio spontanea*" 279.
Also: M. ULLMANN: *Die Natur-und Geheimwissenschaften im Islam* 54 ff.

According to this theory, "all the water on earth comes down from heaven", as aš-Šaᶜbī emphasizes in an explanation of the Qur'ānic verse about the springs inserted into the earth (VII,15: cf.Sūra 39,21). Whether this explanation was influenced by the so-called meteorological theory of all the water on earth, common among the Greek philosophers before Aristotle,[207] cannot be established on the basis of the available historical sources; but the parallelism seems fairly obvious.

As the water descends from heaven, it is regulated in such a way that it does not exceed the right measure flooding the earth, as it did at the time of Noah (VII,16 and 17). This is the task of the clouds. As mentioned above, they were thought to be signs that give direction to the downpour of rain (VII,11). But in Kaᶜb's view they also act as sieves and protect the lands below on earth from ruin (VII,5,8).

The proper measure of rainfall also varies according to the times in which it occurs. There are variances, depending on Allāh's will. But "there is no hour of night or day in which heaven does not bring rain" (VII,25); and "there is no year more abounding in rainfall than another year" (VII,26). It is not stated, however, by which mechanism this regulation is achieved; but presumably it is again through the clouds that Allāh "directs it wherever He wishes" (VII,26).

The clouds, too, are said to originate in various ways. Allāh causes them to fly up to where they are (VII,7). Another, more poetic, theory has them grow on a tree in Paradise (VII, 6). But the most detailed explanation connects the clouds with the winds: They sweep the earth, stir up the clouds and darken them; then they accumulate them and bring forth the rain (VII,21). Or, adopting the opposite view, the wind does not accumulate the clouds, but on the contrary spreads them out as it pushes them from east and West over the edge between heaven and earth. "Thereafter He opens the gates of heaven, and He lets the water flow on the clouds; after that, He lets the clouds pour down the rain" (VII, 22).

(b) Various types of clouds

The clouds are carefully distinguished according to their colours. Thus the black ones are like ripe fruits; for they are the ones that carry the rain (cf. VII,13). The white ones are likened to unripe fruits; they carry no rain (VII,6), or they are said to carry the dew, "and that is what ripens the fruits" (VII,9). But such a distinction does not presuppose careful observation of nature, although many traditional texts do suggest

[207] See: O. Gilbert: *Die meteorologischen Theorien des griechischen Altertums* 393 ff.

The central concern of the early Muslims quoted in this chapter revolved around the search for the source of rain, that is, does it come from heaven or from earth. The reason is perhaps that at that time the old Arabian theory of rain being caused by the *Anwā'*, that is, by certain constellations, came into conflict with the observations of people living near the sea. There it was easy to see that water rises as steam and is carried inland by the clouds. But the old Arabian conception seems to have prevailed; for most authorities give it their support, coupled with various explanations.

Nevertheless, some authorities do not deny that rain can also come from the sea, as manifest in the curious compromise-solution ofḪālid b. Yazīd: "The rain is partly from heaven, and is partly drawn from the sea by the clouds and made sweet by thunder and lightning. But that which comes from the sea does not produce vegetation. As for vegetation, it is produced by that (rain) which comes from heaven" (VII,30). Similarly, Kaᶜb calls rain "the consort of the earth" (VII,18); but it is not clear whether this refers to its origin. The only clear case might be the water of the source which is said to originate from ice, most likely ice inside the earth or on mountains (VII,31). But even here the question of origin is obscured by a further text that says that the ice is coming down from the fourth heaven (VII,32).

The winds are given an intermediary role in the production of rain: They are said to stir up the clouds (VII,1) and carry the water from heaven VII,2); or they drive the clouds which, then, act as the carriers of water between heaven and earth (VII,3,4). In the former case the wind drops the water on the clouds (VII,2).

The question of origin was even raised in regard to the intermediary role of the clouds: "Is the rain from heaven or from the clouds?" (VII, 11). Wahb simply states his ignorance concerning this question: "I do not know whether the rain is brought down in drops from heaven into the clouds, or whether it is created in the clouds and then poured down as rain" (VII,12). But other authorities did know; thus the fragment preceding Wahb's gives the positive answer: "From heaven. The clouds are only signs on which the water from heaven descends" (VII, 11). The descent is somewhat prolonged in fragment VII,13: The water comes from under the throne, then it runs from heaven to heaven down to the lowest heaven. There it awaits the passage of the black clouds that suck it up like sponges; and they carry it wherever God intends to send it (cf. VII, 14). The clouds appear to be indeed full of water, because Adam is said to have drunk from them (VII, 35).

on earth. In this particular text the names are derived from the direction towards which they are blowing; but elsewhere it is the direction from which a wind is blowing that gives it its distinctive name.

As in the text derived from ᶜUṯmān al-Aᶜraǧ, the wind blowing from the South is usually endowed with special benefits. In that area it is said to acquire a fragrant scent as it passes through the garden of ᶜAden. In several other fragments (VI,17,18,19) this garden is identified with Paradise, and the Southwind brings with it blessings for the regions over which it passes, for instance pollens to produce vegetation or fruits (VI, 18, 25; cf. Sūra 15, 22). Ibn ᶜAbbās seems to connect it with rainfall, since in his view the Southwind fills the riverbeds with water (VI,21).

But the Northwind, too, has its benefits: It is even called "the salt of the earth", because without it everything on earth would putrefy (VI,22,23). It is given this function probably on account of the dry heat associated with it; for, according to a tradition of Abū Hurayra, it comes from Hell, but is cooled when it passes through Paradise (VI,18).

Another line of traditional texts, however, refers to the wind as an instrument of destruction. This sombre view is most probably rooted in the Qur'ānic story of the people of ᶜĀd who were punished for their unbelief through a strong wind. But only a small amount of wind is said to have been sent against them, apparently to increase the threat against the unbelievers after them. This wind, according to two traditions (VI, 8, 9), is kept in store on the second earth; and Kaᶜb knew it by the name *al-ᶜAqīm*, the sterile wind. Probably this name was considered appropriate because its bearer brought death, not seeds of life.

8) *Clouds and rain*

(a) Origins

The pre-Islamic Arabs are often said to have been specially skilled in the prediction of rain. Considering the vital importance of rain for the Beduins and their herds, they were naturally keen observers of the various cloud-formations and rainfall. Rain became the archetype of a gift from heaven; and the Arabs came to be called the *Banū mā' as-samā'*, "the sons of the water from heaven".[206] AS-SUYŪṬĪ's *Al-hay'a as-sanīya*, too, devotes much space to traditions about these two meteorological phenomena.

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[206] So H. WEHR in his: *Arabisches Wörterbuch für die Schriftsprache der Gegenwart*.

created a green hyacinth out of light. Then He called it, and terror-struck, it turned into water, trembling until the day of Resurrection — a poetical explanation of its perpetual motion and its green colour (to the Arabs water is not blue). An interesting detail equates the thickness of the green hyacinth in extent to "the seven heavens, the seven earths and what is between them". Thus it might be thought of as a second universe with equal measures, or as corresponding to Empedocles' original earth through whose contraction water was squeezed out.[203]

The identity of the wind, too, is not as obvious as it would seem. Fragment VI,5 reproduces a rather strange description by Muǧāhid: "The wind has two wings and a tail." He probably alludes to some pictorial representation of the wind.[204] Or does he take it to be some flying creature?

Most of the fragments in *Al-hay'a as-sanīya*, however, distinguish between varying numbers of winds, each having a specific direction and usually also a particular name. The highest number mentioned is eight, in fragment VI,10; four of them are described as being beneficial and four others as instruments of punishment. Another fragment (VI,12) names seven winds, six of which are blowing from different directions, and the seventh is *al-Qā'im*, "the breathing of creation". Similarly, where five are mentioned, the fifth is said to blow from all four directions (VI,15). But most often four winds are distinguished, according to the four main directions on earth: North, South, East, and West (VI, 13, 14, 15, 16, 24). These four directions are determined not only in relation to astronomical points of orientation, such as the North-Pole or Canopus (VI,16,24), but also by what is right or left of the Kaᶜba (VI,13) or of the *Qibla* (VI, 12, 14). The latter case would seem to cause confusion, since the *Qibla* is different for any locality that has another Meridian and is either north or south of the Kaᶜba; however, *Qibla* may be used in another, perhaps older, meaning in this text.[205]

A more comprehensive theory of the winds is ascribed to ᶜUṯmān al-Aᶜraǧ (VI,24). According to him, their abodes are under the wings of the Cherubim, the bearers of the throne. When they are set in motion, they first throw themselves on the wheel of the Sun; then on the sea, on the peaks of the mountains, and finally they drop down on the mainland. Thereafter they are separate, as they move on in the four chief directions

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203 See: H. DAIBER: *Aetius Arabus* 142 f.: II, 6,3 = Diels 334 a.

204 Cf. E.A. WALLIS BUDGE: *The Book of the Cave of Treasures* 30.

205 See my commentary ad IV, 19.

comes from the sweat of the snake under the throne (IX,1,2): or, in another version, from the sweat of the reptiles which support the throne (IX,3). The imagery points to Mesopotamia as the source of this kind of cosmology and thus helps to establish the historical background.

6) *The night, the day, and the hours*

The most curious chapter of AS-SUYŪṬĪ's *Al-Hay'a as-sanīya* is undoubtedly the fifth: Concerning the night, the day, and the hours. It gives the impression that its raison d'être is a definite place in a schema that had to be filled. Thus "the hours" — whatever that term may refer to — are only mentioned in the headline. It is somewhat surprising, too, that the fragments collected here have nothing to do with chronology or time-keeping, as one would expect. Rather, they deal with night and day as mythological entities, individually sent by the Creator. For He claims to be time (= fate); and He creates every individual day of the week and gives it its name. Naturally, the conjecture is close at hand that the context is one of predestinarian doctrine.

The question whether night or day was created first is settled with a quotation from Ibn ᶜAbbās to the effect that night must have existed first; because when heaven and earth were split apart there was only darkness in between. With regard to the daily course of the Sun, too, night comes first: It is ushered in by means of a black pearl. On seeing it in the West, fear overtakes the Sun and it sets. Similarly the Sun rises in the morning when a white pearl is suspended in front of it in the East.

7) *Water and winds*

In addition to the fragments dealing with the structure of the universe and the various cosmic phenomena that would usually be covered in a cosmological or cosmographical treatise, *Al-hay'a as-sanīya* contains a great many meteorological observations. For the compiler, obviously, no sharp dividing line exists between such fields of scientific inquiry. Thus characteristically the chapter on the clouds and the rain is preceded by one dealing with water as a cosmic entity and the winds. Apparently they are linked because of the fragments VI,1 and VI,2 where the water is said to be placed "on the back of the wind"; or fragment VI,3 with the opposite order: After its creation the wind is spread out over the water, agitating it wildly.

"The water" in these texts is clearly identical with the ocean. Fragment VI,1 preserves a charming and meaningful story about its origin: When Allāh decided to bring this water into existence, He first

5) *The Milky Way and the Rainbow*

The Milky Way was so noticeable a phenomenon on the nightly sky besides the various stars that it served as mark of orientation with regard to the wanderings of the planets. Only some stars could be seen passing through it (IV,40). As-Suyūṭī, who devotes a special chapter to the Milky Way and the Rainbow, testifies to the fact that the early Muslim cosmologists, on whose views his treatise depends entirely, tried to find some explanation of these two phenomena. The only feature they have in common, the probable reason why they were grouped together, seems to be the fact that they extend over a considerable part of the sky.

However, for the people of that time and region, and perhaps still for as-Suyūṭī in the 15th century, the functions of the Milky Way and the Rainbow may well have been akin. The latter, reflecting the flood story of Gen. 9,14, is described as "the security against drowning after the people of Noah" (IX,7,8,9,10,11). Allāh has established it as such, after having removed the string and the arrow which were formerly on it. Because of this special divine action it can no longer be called *Qausu Quzaḥa, Quzaḥ* being the name of Satan, i.e. the pre-Islamic god of the arrows of hail.[202] — In a similar manner, fragment IX,4 speaks of the Milky Way as "the gates of heaven through which God poured out the water gushing over the people of Noah." In other words, God can open these gates, but ordinarily they hold back the water that could drown all mankind. Hence they, too, are a "security against drowning".

As regards the notion of gates, an old Arabian, and apparently also Babylonian, conception seems to have been amalgamated with the Noah story. For the Milky Way is also called "gate of heaven" independent of water: "The Milky Way is the gate of heaven through which it breathes" (IX,5,8). The fragments IX,6,7 simply describe it as "gate of heaven". But when its direction, apparently the direction of its opening, is specified, again some connection with "breathing" appears to exist: "Its side is from here in the direction of *ad-Dabūr* (i.e. the Westwind), and from right to left" (IX,6). Thus it would seem that the wind(s) come into the world through this heavenly gate.

There are several texts that offer a different, and perhaps older, explanation of the Milky Way. As noted above, one fragment (I,8) has a snake coiled around the throne along which revelation descends as along a chain. This notion appears again in connection with the Milky Way: It

[202] See: M. HÖFNER: *Die Stammesgruppen Nord- und Zentralarabiens in vorislamischer Zeit;* in: *Wörterbuch der Mythologie* I, 462.

explicitly concerned with the planets (IV,40). This is an explanatory statement by Ibn ᶜAbbās about an obscure Qur'ānic verse: "No, I swear by the slinkers, the runners, the sinkers" (Sūra 81,15). The first group, "the slinkers", are in his view "stars which pass through the Milky Way like the running horse". But it may be assumed that he just explains the difficult word *al-ḫunnas* and considers all three terms as referring to the planets. For apart from the Sun and the Moon, they alone would be the stars that pass through the Milky Way, unless certain myths of stars having been moved across the sky are considered (cf. above p. 96 f.). Meteors would hardly be called "slinkers", their speed rather makes them "shooting stars"; and the analogy with the "running horse" would be out of place. But except for their movements, irregular in comparison with the fixed stars, nothing of scientific importance is said of the planets.

(e) The Comet

Indirectly the fragments that make up the *Hay'a as-sanīya* contain a testimony that the theory of the world conflagration was known among the early Muslims of the first generation after the Prophet. For this theory, probably of Iranian origin,[200] must be presupposed in fragment IV,50: Ibn ᶜAbbās tells an early visitor that he could not sleep the whole night because some people had reported to him that the comet had appeared. As a result, he explains, he was full of fear "that the smoke was already coming in".

F.L. Whipple says of the comets that "these strange wanderers have excited more superstitious fear in the human mind than any other class of celestial bodies".[201] But he would probably agree that Ibn ᶜAbbās' fear is, all the same, a somewhat unusual one. The latter apparently takes to heart the Qur'ānic suggestion on the Judgment Day: "So be on the watch for a day when heaven shall bring a manifest smoke" (Sūra 44,9). The Qur'ān does not connect this "manifest smoke" with the appearance of a comet. It seems to be Ibn ᶜAbbās' own idea to consider an astronomical phenomenon the antecedent for the eschatological event alluded to in the Qur'ān. He probably interpreted the Qur'ānic verse in light of a world conflagration theory. Yet it is an open question whether at that time the corresponding astrological theory in which it plays an important role had already Arab representatives.

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[200] Cf. R. MAYER: *Die Biblische Vorstellung vom Weltenbrand. Eine Untersuchung über die Beziehungen zwischen Judentum und Parsismus;* Bonn, 1956.

Also: E.S. KENNEDY: *"Comets in Islamic Astronomy and Astrology"* 44-51.

[201] F.L. WHIPPLE: *Earth, Moon, and Planets* 12 ff.

Moon's phases is also asserted by the famous Qur'ān commentator Qatāda (IV,39); but his explanation is nothing but a paraphrase of the verse Sūra 36,39.

Sūra 71,16 is another verse of the Qur'ān that has stimulated interest in the Moon among the early Muslims; it says that Allāh created it as a light. While the Sun is said to be made from the fire of *al-aṭrā*, the Moon is made from its light. But since nothing specific is said about *al-aṭrā*, it remains doubtful whether the Moon was believed to be nothing but light. It seems more likely that Kaᶜb, the source of this fragment, held that the Moon receives its light from *al-aṭrā*, for instance by way of reflection. Otherwise, the Moon would be of a higher order than the Sun, which is only created from the fire of *al-aṭrā*.

An explanation of a more mythological bent is transmitted from Salmān al-Fārisī: The Moon is created from the light of the veil next to Allāh. Unless "veil" in this text stands for the highest celestial sphere, the cosmological meaning of this text is altogether dubious.

Like the Sun, the Moon keeps its orientation as it moves around the earth: Facing towards the throne or the heavens, and turning its back to the earth and its inhabitants. As regards the Moon, this strange theory may have been cited as explanation of its phases. What it did explain, however, especially if it did not presuppose a constant alinement of the Moon with the Sun, remains entirely obscure.[198]

In the description of the Moon's orbit largely the same features are found as in that of the Sun. Thus it, too, is said to be subjected to man, and therefore constant in its course (IV,2). And again the analogy with the water wheel is used (IV,17). Nothing new is contained in the various fragmentary texts about the Moon either concerning the problem of movement in a sphere, or about the reason for the eclipses. In the context of this whole chapter, it appears clearly that the Moon was only of secondary importance for the early Muslim cosmologists. This is somewhat surprising considering its central function for the fixation of the Arabic calendar. This may be an indication that even at this earliest stage of Muslim science the most productive elements were brought in from other cultures.[199]

(d) The Planets

As-Suyūṭī's *Al-hay'a as-sanīya* contains even less information about the planets than about the Moon. It only has one fragment that is

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[198] Ibid.

[199] Cf J. Henninger: *"Über Sternkunde"* 90, n. 24.

Ptolemy's catalogue of stars; but then it can only be an estimate anyway, and there have been even higher ones.[195]

Actual figures for the size of the Sun are mentioned in two fragments: IV,13 and 14. The first, derived from Ibn ᶜAbbās, ascribes to the Sun as much as 900 farsaḫs by 900 farsaḫs — which would correspond to 5 400 km by 5 400 km roughly. And the second, based on a statement of the later scholar Qatāda, ascribes only a size of 80 farsaḫs by 80 farsaḫs to it — corresponding to circa 480 km by 480 km. As above in the section on the stars, the magnitudes are stated as if these celestial bodies were conceived to be squares, contrary to their appearances as disks. But probably these figures were not intended to give the areas, but rather the two diameters perpendicular to each other; or it might be assumed that these figures are understood to be multiplied by a certain factor to arrive at the area, as in the formula $F = (8/9\ d)^2$, which according to O. Neugebauer was used in Egyptian geometry.[196]

In the *Almagest* PTOLEMY determines the magnitude of the Sun proportionately to the Moon and the earth. In a much more primitive way and with different values, ᶜIkrima is reported to have followed the same principle. According to this Qur'ān commentator the Sun is 11/3 of the size of the earth, and the Moon is as big as the earth (IV,15). Since this fragment only gives his values, there is no means of telling by which way he arrived at them. Perhaps he drew his conclusions about the relative magnitudes of these celestial bodies from observations of solar and lunar eclipes — unless he simply transmitted values received from other scholars or books. In any case, it cannot be disputed that he did try to find an answer to an essentially astronomical question.

(c) The Moon

The Moon, considered smaller than the Sun, is also given less prominence in as-Suyūṭī's treatise. In a tradition related from al-Ḥasan (IV, 38) the Moon itself acknowledges its second rank after the Sun; but it prays to God that its bigger counterpart should never be allowed to see what the Creator has taken away from it: "So the Moon is never seen except as full Moon where it faces the Sun." Thus, through a charming story, the smaller size of the Moon is linked to an equally charming theory of the phases.[197] That Allāh is ultimately responsible for the

[195] Cf. my commentary ad IV,11.

[196] O. NEUGEBAUER: *The Exact Sciences in Antiquity* 78.

[197] Cf. my commentary ad IV, 38.

and above the 360 days. Thus the so-called "Egyptian calendar" may have come into existence: "A year consists of 12 months of 30 days each and 5 additional days at the end of each year".[194] It is somewhat strange to find this calendar in Arabia, because the historical sources mention only the lunar calendar. But since the Persians (Yazdegird) adopted the Egyptian calendar, they may have introduced it into Arabia when they conquered the southern parts.

It seems obvious to the human observer that the Sun moves; but for man the thinker the question arises by which cause this celestial body — if indeed it is one — is moved. The first answer found in the traditional fragments may actually assume that the Sun is no such body; the Creator merely gives it His command, and it moves (IV, 12). Other texts bring in a varying number of angels: It is their function to goad it, to cool it, to pull it. Sometimes two of them are sufficient to do the job, but other authors need 360, and some as many as 70 000 (IV,25.29).

However, one early Muslim scholar, ᶜIkrima, proposes an interesting theory that rests on radically different presuppositions: "The Sun does not rise until a stress is put on it, as it is put on the bow" (IV,26). There can hardly be any doubt that the Sun in this phrase is taken to be a material body. But the analogy with the bow is much more significant. As the bow is bent, an increasing force is "put into it". If this is done to the Sun, in a similar and truly dynamic fashion, it carries the cause of its motion in itself because a force is "put into it", not because a soul is ascribed, or an angel assigned, to it. The text is concise and seems to refer to the daily sunrise, although it could also be understood as a statement about the beginning of the Sun's motion after its creation. But one cannot fail to notice the parallelism with the "impetus-theory" which after John Philoponnos became an influential explanation of stellar motions in the Latin Middle Ages. Whether it is more than a mere parallel cannot be decided on the basis of the available evidence.

Besides being interested in the Sun's daily and yearly movements, the early Muslims — according to the traditional fragments — also tried to determine its size. One such text (IV,11) establishes a proportion between its light and all the light that is under the throne. The Sun is said to be only 1/3000th part of all that light. If this is not simply a high figure to stir the reader's amazement, one might guess that 3000 is the estimated number of all the stars. This number is considerably higher than that of

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194 O. Neugebauer: *The Exact Sciences in Antiquity* 81.

commentator may have thought of ascendant and descendant), or whether the author used a more primitive division of the ecliptic.

There is another fragment which also mentions 360 towers (IV,28); but these are explicitly located in the celestial sphere and described as bigger than the whole Arabian peninsula, which definitely excludes any place on or under the horizon. And a similar text derived from Ibn ʿAbbās (IV,30) allots to the Sun 360 small windows, each of which is privileged to show it for one day in the year.[193] Obviously the idea is the same: The full circle of the ecliptic is divided into 360 units, and the year is assumed to have as many days.

The twelve signs of the Zodiac appear in fragment IV,32, which states that the Sun stays in every tower for a whole month. Each tower is further divided into thirty sections, or "steps", as the literal meaning of the word used seems to be. Between two consecutive "steps" there is a distance of "one barley-corn". Perhaps one may think here of some observation station for the movement of the Sun in the course of a year. After thirty days the Sun transfers to the next tower, thus giving us a year of exactly 360 days. Texts like fragment IV,28, however, suggest somewhat mysteriously that this exaggerated regularity does not fully agree with reality: When the Sun — "at its pole" — reaches the foundations of the throne, it falls down in adoration, until it is commanded to procede. It is not clear from the text whether this happens every day when the Sun reaches its highest point or only on its yearly course. But the second alternative seems to be more probable. If the throne was thought to be located at "the height of heaven", the South-Pole, which was placed in Capricorn — as shown above — the Sun's prostration probably was believed to occur when it reached the Tropic of Capricorn. For, then the shadow of the gnomon would not move, or hardly at all, for several days. But since this also happens at the Tropic of Cancer, the observation of the shadow alone cannot have been the decisive factor. Or was an instrument like the astrolabe used, which would show more clearly that the Sun is on the "ascent" towards the South-Pole?

Whatever the instrument of observation may have been, the delay of the Sun at the Tropic of Capricorn — mythologically explained as its prostration before God's throne — was probably welcomed by the astronomers as a means for adding the remaining days of the year, over

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[193] An-Nuwayrī relates that Wahb b. Munabbih believed the Sun to be on a wheel that has 360 ʿ*urwa* (= buttonhole, loop): *Nihāyat al-arab* I, 41.15.

latitudes above the Tropic of Cancer, thus giving the southern sky a certain predominance for the observer in the northern hemisphere. Is that the reason why the South-Pole is the "height of heaven"?

Another obvious phenomenon for the earthly observer is the setting of the Sun. Some of the strangest texts in *Al-Hay'a as-sanīya* connect this event with the burning of Satan, just as in the case of sunrise (IV, 33). Perhaps "Satan" stands for some feature of the horizon, in the East as well as in the West: Satan steps in front of the Sun to interfere in its course; but the Sun sets between his two horns, and Allāh causes him to be burnt underneath it.One is reminded of the Egyptian goddess Hathor in the image of a cow, with the sun-disk between the horns.

Once the Sun has overcome Satan it is ready for its setting: It is lifted up to the seventh heaven and, according to ʿIkrima, it enters a sea under Allāh's throne (IV,23) where it is occupied with the praise of the Creator. Thus three times our texts suggest some delay in the course of the Sun: At its rising, its setting and after it has reached the throne. The Sun seems to linger under the horizon at dawn — due to its slow eastern motion, the Sun rises somewhat later every morning. Then in the West it stays longer above the horizon than expected on the basis of its diurnal progression. And at the throne — what better reason could be found for its long absence during the night hours, or its slow return from the winter-solstice, if the throne is actually located at Capricorn?

But not only the daily, the yearly course of the Sun in the ecliptic, too, was evidently observed with some care by the authors of these early cosmological fragments. They understood that the variations in the Sun's path bring about the seasonal changes of the weather and are, therefore, beneficial for mankind (IV,22). Apparently they observed and somehow registered the time and place of sunrise every morning; for they noticed that its exact spot is different every day (IV,31), and correspondingly that the Sun sets at a different place every evening. It seems noteworthy that this observation is stated in a comment on the Qur'ānic verse Sūra 70,40: "The Lord of the Easts and the Wests." It might be argued that not observation, but the plurals "Easts" and "Wests" account for the numerous spots of sunrise and sunset. In his search for an explanation of the unusual plurals the commentator falls back on the notion of the 'tower' (*al-burǧ*). But in this passage the term does not have the usual meaning of 'sign of the Zodiac', rather it stands for the exact locations of the daily sunrises and sunsets in a year of 360 days. The question remains, however, whether this comment was the result of confusion (the

notion, not a physical one. But since the celestial ocean is placed just above the seventh heaven, it might be argued in the light of Greek astronomy that this particular heaven seems to have, and thus cause, the "revolution of the wheel".[192] However, the text itself does not speak of such a revolution of that heaven.

To complicate the picture even further, another fragment (IV,20) has the sphere of Sun, Moon and stars revolving "between the sky and the earth", and indications are that this is a single sphere. Even within the same fragment IV, 35 there are a number of inconsistencies; it may be assumed that heterogeneous cosmological theories were crudely pieced together. Thus it is stated that the celestial ocean itself is moving along "with the speed of the arrow", an idea that recalls the congruous motion of air and ether discussed above on the basis of texts from ǦURǦĀNĪ's *Šarḥ at-taḏkira* (cf. pp. 17 ff). It is especially difficult to understand the connection of the Sun sailing on that ocean with the revolution of the "wheel in the depth of that sea's flood". Perhaps this merely implies that the wheel that carries the Sun has sunk into that sea. For the Sun is thought to be on the surface, as becomes clear from the strangely detailed description of an eclipse: "The Sun falls down from the wheel; and it falls into the flood of that sea" (IV,35). The degrees of totality correspond to the degrees of immersion. To terminate this "miracle", angels are put to work to again pull together the Sun and the wheel, from which it has fallen.

Another explanation for the eclipse is given in fragment IV,34: The reason for this phenomenon is a deviation of Sun and Moon from their regular courses. This is said to happen when they are given a glimpse of Allāh's greatness (whatever this may mean).

While the Sun proceeds on its course, it is fixed in such a way that its face is continually turned towards the throne (IV,10), or — as fragment IV,8 says — towards heaven. From earth, therefore, only its backside is seen; and the same is true in the case of the Moon. However, it remains doubtful whether these texts speak of a lack of rotation, by Sun and Moon, around their own axes. The continual alinement with the throne may merely mean that they always remain south of the Zenith in

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192 Cf. PORPHYRY's view: "One circle of the universe is in motion for all its parts, but it is borne along its starry paths with seven zones, which the Chaldeans and much-to-be-envied Hebrews called 'heavens', moving along a seven-fold course". Quoted from; *"On the Philosophy derived from Oracles"*; in: A.B. HULEN: *Porphyry's Work against the Christians. An Interpretation* 16. According to this view, of course, none of the heavens can cause the "revolution of the wheel".

ice on it (IV, 27); and ᶜIkrima offers the view that the celestial ocean acts as a cooling unit (IV, 29). As a beneficial result, the Sun does not burn the inhabitants of this world, but together with the Moon it spreads light over the earth as well as over heaven (IV,8). Although this is not explicitly stated in this passage, the source of this light is apparently again to be sought in *al-aṯrā*, or the central fire.

Many fragments contain statements about the characteristic features of the Sun's motion. At its rising, it is said to come forth from behind a mountain, the height of which is "80 farsaḫs in the sky" (IV,37). This mountain, accordingly, seems to be situated on the Eastern horizon; and with a height of about 480 km it is a serious obstacle to be overcome; as a matter of fact, if Qatāda's figure for the magnitude of the Sun is preferred, this mountain is as big as the Sun itself (IV,14: 80 farsaḫs). But since both fragments stem from different sources, the agreement of the figures could be mere coincidence.

A more poetical description of such an obstacle in the East is found in fragment IV,35: Allāh created a veil of darkness in the East in the measure of all the nights put together from the time of the world's creation to the last day. Poetical inspiration may indeed be the source of these ideas; at least they imply a natural "explanation" of the phenomenon of sunrise, whereas another text, with a strong theological orientation, makes East and West relative notions totally depending on God's free will (IV,21). And a mythological tradition introduces an obstacle of a different nature: Satan tries to retain the Sun, but it rises between his two horns, while Allāh burns him underneath (IV, 33).

As the Sun passes through the sky, it follows a regular path; and therefore the Qur'ān, in Sūra 14,33, considers it subjected to man. In its motion it is compared to a water wheel (IV,17), or in the words of the Qur'ān, it is "afloat in a sphere" (Sūra 21,33 and 36,40; cf. IV,35). For like the other celestial bodies, the Sun is sailing on the heavenly ocean. Because of this strange imagery the exact meaning of *al-falak* remains rather obscure. A slight change of vocalisation would give the word a perhaps more fitting meaning: *Al-fulk* (= 'ship').[191] As the text runs in fragment IV, 35, it appears that the two notions of the ship and that of a sphere carrying the Sun over the celestial ocean are interwoven. Indeed, as explanation it is stated that "*al-falak* is the revolution of the wheel in the depth of that sea's flood". Hence it would appear to be a dynamic

[191] Cf. I. LICHTENSTADTER: *"Origin and Interpretation of some Qur'ānic Symbols"* 70 ff. — Cf. my commentary ad IV, 18.

"The lamp can only be (a lamp) by fire" (IV, 6). There is a text from Salmān al-Fārisī saying that Allāh created the Sun from the light of His throne (IV, 12); but more interesting for cosmology is another one from Kaᶜb which emphasizes the difference between Sun and Moon: While the latter is only created from the light of *al-aṯrā*, the first is created from the fire of that entity or substance (IV, 6).

The following fragment (IV,7), too, states quite clearly that the Sun is made of fire; in addition it seems to give us a clue as to what the nature of this substance derived from *al-aṯrā* is. For it is shared by the Sun and the devils: "A fire that drinks, but does not eat." As such, it contrasts with the fire from which the angels are made: "A fire that eats, but does not drink." To understand the difference one might think of fire that burns solid materials, as opposed to fire that burns some fluid like oil. But of greater significance, it would seem, is the remarkable association of the Sun with the devils, not with the angels, who usually are said to be its moving agents. Since the devils, in the division of the universe described above (cf. p. 87), are assigned the "under-world", especially the seventh earth, it seems necessary to place *al-aṯrā* at the opposite side of Allāh's throne, even perhaps to identify it with the seventh earth.

To apply to it the notions connected with the Greek, and especially the Aristotelian, ether — widely adapted into Arabic as *al-aṯīr* — would at this stage be quite anachronistic, because the corresponding division of all matter into five elements is not mentioned anywhere. However, according to K. Rudolph, Mandean cosmology knows an entity called "Äthererde" which may be a parallel notion.[189] If we prefer to turn to Greek philosophy and science for a parallel, we may be justified to call attention to Philolaos' Pythagorean cosmology; it is based on the idea of a central fire in the universe that remains hidden from the inhabitants of this world not only because of the rotation of the earth, but also through the interposition of a counter-earth. However, in the universe of the early Muslims, as could be gathered from the fragments, there are five earths between the upper and the lowest one, not just one counter-earth.[190]

This fire of the Sun was pictured concretely; this emerges from two texts which emphatically state that everything would be set afire if this celestial body of fire were not cooled all the time: According to Abū Umāma al-Bāhalī, there are seven angels specially charged with throwing

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[189] K. Rudolph: *Theogonie, Kosmogonie und Anthropogonie in den mandäischen Schriften* 19.

[190] Cf. J.L.E. Dreyer: *A History of Astronomy* 41 ff.

change takes an interesting turn in fragment IV, 41, where Ibn ᶜAbbās states that Suhayl was the intermediary between the giver of command and the stars; in this position it became the originator of rebellion. This agrees with a passage in Abū l-Qāsim ᶜĪsā b. ᶜAlī's refutation of astrology, according to which some stars are in the position of soldiers (*bi manzilat al-ǧund wa l-ᶜaskar*).[188] This is apparently a parallel to the Lucifer-story, but its cosmological significance — if indeed it had one — escapes us.

Ibn ᶜAbbās' answer to an inquiry about the magnitude of the stars has a more scientific appearance; he said: "Twelve farsaḫs by twelve farsaḫs" (IV, 13). Since a farsaḫ is about six kilometers, this would give a star an area of about 5 184 km^2 (or about 4071.504 km^2 if we use the formula $F = r^2 \pi$). Compared with the Sun, for which the figures of 900 farsaḫs by 900 farsaḫs, or of 80 farsaḫs by 80 farsaḫs are given, the area of a star is small. That the magnitude of the stars is given as if their surfaces were squares, and all of the same size, is most unusual. Since this is even applied to the Sun where the appearance of a disk is obvious, one wonders whether the inquirer was actually satisfied with this answer. Or should it be understood that the two sides of the squares are halves of two great circles? or two diameters of circular disks?

(b) The Sun

The Sun, naturally, receives the greatest share of interest in the early Muslim texts on the cosmos. Since there are many apologetical remarks against its adoration, this great interest in the Sun may have been caused by the presence of a solar cult in pre-Islamic Arabia. However, on the whole the traditional fragments reflect the same basically scientific questions already encountered in the section dealing with the stars:

1. What is the nature or composition of the Sun?
2. Which are the characteristics of its motion?
3. What is (are) the cause (causes) of this motion?
4. What is the Sun's magnitude?

As-Suyūṭī starts his collection of fragments with the Qur'ānic verse Sūra 71,16: "He set the moon therein for a light and the sun for a lamp." This is not a mere play with synonyms, but a differentiated statement about the nature of these two celestial bodies: The Moon has light, but the Sun is itself made of fire. Similarly Kaᶜb elucidates that Qur'ānic verse by saying:

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188 Ibn Qayyim al-Ǧauzīya: *Miftāḥ dār as-saᶜāda* II, 151.

even if a nexus is lacking between nautical skills and astronomical knowledge that would make the existence of astronomy plausible, the non-existence of this particular science cannot be proven either. Only the textual allusions remain — and ignorance about the astronomical presuppositions.

In order to be guided by the stars it is enough to see them. But our texts, over and above that, assert that they exert a direct physical influence on occurrences such as disease. Thus Abū Hurayra is reported to have said that at its rising the star of the early morning takes away epidemic and disease, or reduces their intensity (IV, 48; cf. 49). Apparently he had the Pleiades in mind, known to the Arabs simply as *an-naǧm* (= the star); for the preceding fragment explains that with the setting of the Pleiades diseases and epidemics become frequent, whereas they disappear at the rising of this constellation. Lane says that "it is believed to be the most beneficial, in its influences on the weather, of all the Mansions of the Moon."[184] But our texts do not interpose the weather.

However, al-Qurṭubī (probably Abū ᶜAbdarraḥmān Baqīy b. Maḫlad b. Yazīd, 201-276 H./817-889 A.D.) seems to have rejected any physical causality of the stars (IV, 46). He concedes such a belief only to the fortunetellers and those people who follow them. In particular he turns against the claim of certain people having their own star in the sky. Since he mentions the fortunetellers he probably intended this statement to be a refutation of judicial astrology. But as-Suyūṭī probably included al-Qurṭubī's statement in his text because it denied the special relationship between a human being and a star. For it follows several texts about Suhayl (= Canopus) described as a former Yemenite tithe-collector who was transformed into a star because of his injust dealings (IV, 42-44). It may seem strange that this transformation was understood as a punishment, but that was common in Arabia.[185]

The basic idea — also contained in fragment IV, 45 and in the Arabian legend of Suhayl having been kicked to the place where it is now found[186] — is that this star has undergone some major change. Strangely enough, Canopus for the Greeks, too, was a newly-named star, probably because it hardly rose above the southern horizon.[187] This idea of a

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184 *Lexicon* I, 335.

185 See: J. HENNINGER: *"Über Sternkunde und Sternkult in Nord- und Zentralarabien"* 90.

186 Ibid., 90.

187 See: F. BOLL: *Sphaera* 174.

general, and of some in particular. Thus it is asserted, on the authority of the Prophet himself, that "the Sun, the Moon and the stars are made of the light of the throne" (IV, 5). As seen before (I, 3, 36), the throne itself is believed to be made of Allāh's own light. Hence the celestial bodies appear to be further steps in a kind of light-emanation from Allāh, but from Allāh as Creator. Perhaps this light was conceived rather concretely as resulting from fire, because according to a certain Maysara the stars emit a sound at their setting (IV, 36). In the absence of any explanation one might think of the sizzling sound of a burning object dipped into the sea, in this instance probably the celestial ocean.

The stars are given heterogeneous functions in regard to the whole universe. The simplest, and most poetic one, is that the Creator made the stars to adorn the lowest heaven (III, 8 and IV, 4). Coupled with this aesthetic view, based on Sūra 37, 6. 7, is the sombre idea that they protect man against the devils. As in the Manichean and Mandean traditions, here too religious notions are intimately connected with the cosmological ones.[181] Even more obscure is the theory that creation is firmly joined together through the stars (III, 25). This may possibly be based on conceiving of the stars as celestial rivets, similar to Anaximenes' view of the nails in the icy substances.[182] The stars might also represent knots; for there is another text (III, 24) that compares heaven with a well-knotted garment.

The usefulness of the stars for nautical purposes, or as guides for night-journeys, is already recognized by the Qur'ān: "It is He who has set the stars for you, that you might find your way by them in whatever darkness there is on land and sea" (Sūra 6,97). Since caravans in the hot deserts of Arabia often travelled by night, it is not at all surprising that even at this early date the Arabs knew to use star observations for guidance through the deserts. More surprising is the Qur'ānic reference to seafaring as depending on the stars, since little is known about sea-journeys of the early Arabs. Do our texts, therefore, establish the existence of a science of the stars among the early Muslims? P. Kunitzsch is probably right in emphasizing that even modern nautical handbooks do not presuppose much astronomical knowledge; thus the existence of scientific astronomy in early Arabian culture cannot be assumed merely because of allusions to star observations by travellers and sailors.[183] But,

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181 Cf. J. VAN ESS: *Frühe Mu'tazilitische Häresiographie* 106.

182 See: H. DAIBER: *Aetius Arabus* 150 f.: II, 14,3.

183 See: P. KUNITZSCH: *Untersuchungen zur Sternnomenklatur der Araber* 29 f.

The unit here would be 'years', whatever that implies. A noteworthy detail in Anaximander's cosmology, of some significance with regard to the cosmology emerging from our Arabic texts, is his assumption that the fixed stars are the celestial bodies nearest to the earth, and the Sun is the most distant one. Hence the 252 000 'years' would be the radius of his universe. As shown above in III, 47, according to the traditional Arabic conceptions this distance amounts to only 50 000 'years'[180]: This figure appears to be the sum of the 14 000 'years' for the 28 steps of 500 'years' each comprising all the heavens and the earths and of the 36 000 'years', the distance between the seventh heaven and the throne according to fragment I, 35. Which distance is really meant, however, remains obscure.

4) *Sun, Moon, and stars*

The seven heavens of the Qur'ān and the early traditions have been asserted at times to be equivalent to the spheres of a higher developed astronomy. It is, however, noteworthy that in the chapter of *Al-hay'a as-sanīya* devoted to them not one single heaven is definitely connected with the planets or the fixed stars. The celestial bodies appear only in the fourth chapter, in which all the stars are ascribed to a single heaven, the lowest one (IV, 4 — quoted from Sūra 37, 6. 7). Another text (IV, 35) asserts that the Sun, after having set, covers the whole distance between the seventh heaven and the lowest steps of paradise (probably either the lowest earth or heaven). This alone seems to confirm the division of the universe into seven heavens and seven earths to be more an artificial scheme than a physical reality. Nothing is learned from it about the movements or the nature of the stars. Therefore, at this earliest stage of Muslim cosmology, the seven heavens cannot be considered equivalent to the spheres later ascribed to the various stars or planets. It is even doubtful whether this system of seven heavens can have facilitated the adoption of the Greek model of separate spheres; the notions are altogether different, and indeed that of *al-falak* was also available in these traditional texts (cf, IV, 17, 18, 19; 20).

(a) Stars

In our fragments there are a large number of traditional statements concerning the composition, magnitudes and functions of the stars in

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[180] Concerning the order of the celestial bodies, namely fixed stars — Moon — Sun as the highest of all, which apparently is of Persian origin, see: R. Eisler: *Weltenmantel und Himmelszelt* I, 90, note 3.

Like the 500 years in our Arabic texts, the 252 000 stadia — or rather half the amount, 126 000 stadia — are not only used to measure the earth, but also the cosmic distances. Thus we learn from Pliny and Censorinus that in Pythagoras' estimation the Moon's distance was 126 000 stadia; Pliny, further, makes the Sun's distance from the Moon twice as big, and that of the fixed stars from the Sun three times as great.[176] Whatever the equivalence of these 'stadia' was supposed to be, the figures can easily be connected with the scheme of 500 'years': The 500 'years', corresponding to the 180° of the visible sky, or rather of half the globe, should also correspond to the 14 lunar stations above the horizon when the course of the Moon is considered. And since the shadow of the Moon during a total eclipse was found to amount only to 1/18 of the earth,[177] the ancient cosmologist probably concluded that he had to multiply the above figures by 18. Hence the equation:

$$18 \times 14 \times 500 = 126000.$$

However, this figure could not be directly applied to the distance of the Moon, but to half its orbit; a system of nested spheres may have been presupposed, leaving no empty space between the earth and the lowest part of the lunar sphere.[178] It should be noted that the same figure results from the multiplication of the basic units of the ecliptic with 700, the amount of stadia between two degrees before Ptolemy's time:

$$30 \times 6 \times 700 = 126000. \ (6 = \text{half the Zodiac})$$

Obviously, this belongs to the realm of number speculations, not measures. The scheme of 500 years ties in with others.

Strangely enough, it also ties in with the oldest known estimates of the solar und lunar distances related from Greek thinkers. According to Simplicius and Hippolytus, the first scholar to venture into this field was Anaximander. The reports differ somewhat; but the most trustworthy one has it that he believed the Moon's distance to be 19- or 18-times as great as the earth, and that of the Sun 27-or 28-times as great as that of the Moon.[179] If we take the earth's size to be 500 'years', as in our Arabic texts, the following figures result:

$$19 \times 27 \times 500 = 256500; \text{ or:}$$
$$18 \times 28 \times 500 = 252000.$$

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[176] See: J.L.E. Dreyer: *A History of Astronomy* 181.

[177] Ibid., 182.

[178] Cf. B.R. Goldstein: *"The Arabic Version of Ptolemy's Planetary Hypotheses"*, esp. 40.

[179] See: J.L.E. Dreyer: *A History of Astronomy* 14 f.

exterior circle which 'carries' the *Kursī* is identified with the Tropic of Capricorn.

As regards the question of cosmic dimensions, the localisation of the throne in Capricorn, together with a fragment about the course of the Sun, is a clue for an understanding of what was meant by the twenty-eight steps of 500 'years' each. Fragment IV, 28 has the Sun prostrating in worship when it reaches the foundations of the throne. In the background is probably the observation that the shadow of the gnomon, not changing for several days when the Sun has reached the Tropic of Capricorn, seems to indicate no movement. The steps of 500 'years', therefore, seem to be counted along the course of the Sun from the 'lowest' point in the ecliptic, Cancer, up to the 'highest', Capricorn. Thus they again would correspond to 180°, as we saw before with regard to the extension of the earth, but in this instance the course of the Sun in half a year appears to be used as the measure of the whole universe.

The steps of 500 years can, of course, also be linked with the astrological system of the Thousands[172] and the planetary revolutions adding up to the world year of 4 320 000 years; $360 \times 500 = 180\,000$ (for half a revolution of one planet); 360 000 (for a complete revolution); 4 320 000 (for the system of 12 revolutions).[173] The 500 years, then would measure half the course of a planet and thus again correspond to 180° (if the complete revolution in 360 000 years corresponds to 360°).

The figure 500 has even been connected with the precession of the equinoxes and has been used as the so-called "Phenix-period".[174] But the discussion about this period reveals most clearly that this figure can crop up in all sorts of speculations. Squared it actually gives Eratosthenes' original figure of stadia for the circumference of the earth; he or some successor later added the 2000 stadia resulting in the traditional figure of 252 000 stadia.[175]

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172 Cf. D. PINGREE: *The Thousands of Abū Maʿshar* 30.

173 Cf. E.S. KENNEDY & D. PINGREE: *The Astrological History of Māshāʾallāh* 73.

174 See: F.X. KUGLER: *Sternkunde und Sterndienst in Babel;* II. Buch, I, 43-45 (Hommel). Also: F.K. GINZEL: *Handbuch der mathematischen und technischen Chronologie* I, 177 ff.

175 See: J.L.E. DREYER: *A History of Astronomy from Thales to Kepler* 175.
Concerning all these measures see: O. NEUGEBAUER: *A History of Ancient Mathematical Astronomy* Book 4, IV B 3, pp. 634 ff.

Also: N. SWERDLOW: *"Hipparchus on the Distance of the Sun"* 287-305.

Further: G.J. TOOMER: *"Hipparchus on the Distances of the Sun and Moon"* 126-142.
And: C.M. TAISBAK: *"Posidonius Vindicated at all Costs? Modern Scholarship versus the Stoic Earth Measurer"* 253-269.

The first and the third possibility seem to agree more closely with the literal meaning of the texts, and they could even be combined (cf. Muǧāhid's cosmological model);[168] but the second seems to suggest itself because the number of twenty-eight 'cosmic steps' coincides with the number of the lunar stations, and on earth the 500 'years' apparently correspond to half the circumference. Perhaps one can decide between these possibilities by taking into consideration that all these 'cosmic steps' lead up to the throne. — But where is that located? Based on the image of a dome-shaped universe, it might be assumed that it was believed to be centered on the Zenith or the celestial North-Pole. A text in AL-MASᶜŪDĪ'S *Tanbīh,* however, makes it clear that still in his time the South-Pole was considered to be 'on top of the world': "Le haut du ciel est le pôle Sud; il est en haut et le pôle Nord est en bas; et ainsi du reste."[169] Another text in the same book, which the translator can only explain as a "distraction" of al-Masᶜūdī, but which exactly corresponds to Babylonian cosmology, goes a step further: "Ils (i.e. la plupart des philosophes) en ont fait un corps arrondi en sphère et creux, tournant sur deux pivots qui sont les deux pôles, dont l'un est la tête de l'Écrevisse et l'extrémité des Ourses, opposée au point Sud, et dont l'autre est la tête du Capricorne, indiquée par des étoiles qui correspondent aux Ourses, opposées au Nord."[170]

This view of the South-Pole being in Capricorn, strange as it may seem, agrees remarkably well with the cosmology described by the traditional fragments. There can be little doubt that the capricorn is identical with the Arabian mountain goat. Eight of them, according to one tradition, support the throne; thus its location is probably at the height of heaven, the South-Pole, in our texts identical with the head of Capricorn. The constellation of Capricorn, with two stars of Aquarius right in front of it, resembles a throne with a footstool in front of it; therefore it may be surmised that for the early Arabs the throne was visible on the nightly sky, although it is invisible in the view of later writers.[171] It is noteworthy, too, that on the ordinary astrolabe the

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the reconstruction of the *kai thien* cosmology in: J. NEEDHAM: *"The Cosmology of Early China"* 88.

[168] This model has been depicted in: *Risāla fī l-hay'a al-mabnīya ᶜalā l-aḥādīṯ wa l-aṯār,* by IBRĀHĪM AL-QARAMĀNĪ AL-ĀMIDĪ; MS. Heidelberg, Cod. Heid. Or. 317, fol. 100 v.

[169] AL-MASᶜUDĪ: *Kitāb at-tanbīh wa l-išrāf;* transl. by Carra de Vaux as: *Le Livre de l'Avertissement* 19.

[170] Ibid., 11 f.

[171] AL-QAZWĪNĪ: *Kitāb ᶜAǧā'ib al-maḫlūqāt* I, 12.

stadia a day over that of Herodotus of 200 stadia, the distance covered in 500 years would amount to about 6 076 593 km for half the circumference of the earth — certainly an exorbitant figure. So instead of 'years' we ought to translate the word as 'day's journeys', in all probability; this conforms to the basic meaning of the root *ᶜawm*[165] and does not conflict with the old Arab view of the celestial bodies floating in the sky.

The resulting figure of 16 648.2 km for half the circumference of the earth (if 1 stadion = 0.18498 km; 14 175 km, if 1 stadion = 0.1575 km) and 33 296.4 km (or 28 350 km) for the whole is quite convincing. If we take Herodotus' day's journeys of 200 stadia as basis, the figures are even more convincing: 18 498 km (or 15 750 km) and 36 996 km (or 31 500 km). They compare quite well with Eratosthenes' 252 000 stadia = 39 690 km (1 stadion = 0.1575 km) and with the modern values; or with the 6 597 9/25 farsaḫs (37 407.0312 km, if 1 farsaḫ = 5.67 km) for the circumference of the earth according to the early Arab astronomer Yaᶜqūb b. Ṭāriq.[166] More cannot be said without a knowledge of the underlying equivalences. The application of this measure of 500 'years', or day's journeys, to the cosmic distances is of course new. But the Babylonian correspondence between the movement of the diameter of the Sun, roughly half a degree, across the sky and a journey on earth, suggests how such an extension of earthly measures into the cosmos may have arisen.

Nevertheless, the real interpretation of this system of cosmic measures remains obscure. The lack of concrete details in the description of the heavens and the earths, coupled with the summary allotment of 500 'years' to each of them, all this leads to the belief that these are no real measurements at all, but possibly elements of a primitive system of coordinates. It recalls the division of the ecliptic into the twelve signs of the Zodiac, or the lunar orbit into the twenty-eight lunar stations. But the question is: Are the 28-times 500 'years' supposed to be applied along the radius of the dome-shaped universe, with the basis of the seventh earth and the throne being at either end, or do they run along the circumference of the whole? For, on earth they are counted along the great circle over 180^{0} (East-West, or South-North), as shown above. A third possibility would be to count them along the basis of the universe in the shape of a hemisphere, i.e. as a diameter.[167]

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165 See: IBN MANẒŪR: *Lisān al-ᶜarab* 326 ff.

166 See: D. PINGREE: *"The Fragments of the Works of Yaᶜqūb Ibn Ṭāriq"* 105 ff. In the *Aḫbār az-zamān* (Beirut, ²1386/1966; p. 92) al-Masᶜūdī reports that people believe a quarter of the earth to be equal to 120 'years' *(sana)*.

167 For an illustration of how these measures may have been applied along the sky see

to apply this obvious correspondence. But there are no texts that would confirm this straightforward transfer of the measure of a journey on earth to cosmic distances. Therefore it remains doubtful whether these figures may be translated into miles, or kilometers.

However, possibly these measures might be interpreted by assuming that they are influenced by the Babylonian system of measurements. According to F. Hultsch, that was based on a correspondence between heavenly and earthly distances:

> Eine sinnreiche Kombination, deren Zusammenhang sich leider nicht bis in alle Einzelheiten verfolgen läßt, hat die alten Babylonier darauf geführt, die scheinbare Bewegung der Sonne am Himmelszelt mit den irdischen Wegmaßen zu vergleichen und das System der letzteren nach dem astronomischen Maße zu gestalten. Aus den Andeutungen, welche Achilles Tatius hierüber giebt, läßt sich abnehmen, daß sie die Bahn, welche die Sonne während eines Äquinoktialtages am Himmel beschreibt, nach dem Maße des scheinbaren Sonnendurchmessers bestimmten, und da sie fanden, daß die Sonne während einer Äquinoktialstunde nahezu dreißig ihrer Durchmesser, also einen in zwei Minuten zurücklege, so verglichen sie diesen kleinsten Teil der Sonnenbahn mit der Strecke, welche ein rüstiger Fußgänger in gleicher Zeit zu durchschreiten pflege. Dieses Maß des irdischen Raumes nun, welches uns unter der griechischen Bezeichnung *stadion* bekannt ist, normierten sie auf ebensoviele Ellen, als die Sonne von einem Aufgange bis zum anderen Grade am Himmel zurücklegt, also 360, und gelangten von da aus weiter zu dem Maße von 30 Stadien oder dem Stundenwege eines rüstigen Fußgängers, als dessen Benennung nach dem Vorgange griechischer Schriftsteller *Parasagges* uns geläufig ist.[163]

Keeping this ancient Babylonian system of dual measurements in mind and considering the traditional figure in one of the fragments (XII, 3) for the extension of the earth, namely 500 years (300 covered by seas, 100 desert, 100 cultivated lands), a quite probable explanation of our cosmic measures emerges: The 500 'years' extension of the earth correspond to the 180^0 longitude into which many ancient geographers, including Ptolemy, fit the whole of the *oikumene*. In view of this correspondence it is very unlikely that the 500 'years' were indeed understood to be years.

For, assuming that a day's journey was roughly the same for the Arabs as for the ancients,[164] and choosing Pausanias' lower figure of 180

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[163] F.O. Hultsch: *Griechische und Römische Metrologie* 382 f.

[164] Ibid., 51, n. 1.

rock, according to a tradition from Abū Mālik (III, 41), is the final piece of creation which was left over when everything was finished. This is strongly reminiscent of Empedocles' "neglected matter" (*ʿunṣur muʿaṭṭal*), as mentioned in the *Placita Philosophorum*.[159]

However, in yet another cosmological model this rock was apparently not the lowest part of the universe. Thus we learn from ʿAṭīya al-ʿAufī that it is carried on the horns of the bull, and that the bull stands on the ground (*aṯ-ṯarā*). Nothing, however, is said about the identity of the bull, nor the exact nature of the ground it stands on. No doubt, the most convincing statement about the lowest region of the universe is that knowledge here is at its limit (III, 43).

(*c*) The cosmic dimensions

In the cosmological models described above, featuring God's throne, the footstool, the celestial ocean, seven heavens and seven earths, and below them the rock, the fish and the lower ocean, the dimensions are of special interest. It is a notable exception when one text (IV, 35) gives the measure of the celestial ocean as three farsaḫs, the equivalent of a distance of about eighteen kilometers on earth. In all other instances — save where the texts deal with individual celestial bodies — distances are always given in years: The diameter of an individual earth or heaven and the distance from it to the next is said to be 500 years; or the length of the tablet is said to be 100 years (II, 3), of the stylus 700 years (I, 16) or 500 years (II, 3, 5, 12, 13).

In view of the modern practice of measuring astronomical distances in light-years one is tempted to apply that measurement to these cases. But obviously truly 'astronomical' figures would result. Yet, since an acquaintance with a measurable speed of light at such an extremely early time is unrecorded, this assumption would be a blatant anachronism.[160] The obvious expedience is to apply the miles an average caravan would cover in a year and multiply the amount by 500. After all, this was the way geographical longitudes were measured far into the Middle Ages.[161] Aš-Šahrastānī, in his *Al-hay'a wa l-Islām*[162], certainly does not hesitate

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159 See: H. Daiber: *Aetius Arabus* 108: I 5,2 = Diels 291 a.

160 The first Arab scholar to discuss the speed of light apparently was Ibn al-Haytham; but he did not use it as a measure of spatial distance (cf. M. Schramm: *Ibn al-Haythams Weg zur Physik* 229-244).

161 See: Al-Bīrūnī: *Kitāb taḥdīd nihāyāt al-amākin*. And: E.S. Kennedy: *A Commentary upon Bīrūnī's Kitāb Taḥdīd al-Amākin*.

162 Aš-Šahrastānī: *Al-hay'a wa l-Islām* 117.

(b) The seven earths

For the modern reader it is much harder to accept the extension of cosmology to the lower world, the seven earths. But for the early Muslims they apparently were merely part of the same creation (III, 31). Nevertheless, to judge by the great variety of views proposed, a concrete and detailed conception of the seven earths was not easier for those people than it is for us. The most common view of the lower earths identified them with the stages of hell. Each is said to be the store-house of one of the torture instruments of hell, as we see it in fragment III, 33:

second earth: sterile wind
third earth: stones of hell-fire
fourth earth: scorpions of hell
fifth earth: vipers of hell
sixth earth: brimstones of hell-fire
seventh earth: the devil.

Sometimes the order of these store-houses of hell changes, and fragment III, 37 puts the Ǧinn on the third earth. But basically the idea remains the same. One is tempted to believe that the schema of seven earths was present already; and since it was too abstract, popular fantasy adopted it to locate the horrors of hell. But its background may be a cosmology resembling the one ascribed to the Pythagorean philosopher Philolaos which assumes a fire in the center of the universe shielded away from us by our earth. As will be seen later (IV, 6,7), our traditional texts, too, seem to need a fire to explain the origin of the light of Sun and Moon, or for that matter of their fire.

Fragment III, 43 presents a cosmological model of a different kind; it seems to combine a number of originally separate elements. The basic schema is a succession of earths alternating with water (oceans?) between them, followed by the rock, then the angel and the fish underneath the whole universe. The first half probably originates from a geographical division of the world; but the second introduces the truly cosmological idea of the support of the universe: The various earths do not merely have their distinct place in the whole, but beneath them is a foundation, a supporting entity. Water is most often mentioned; it is probably the sea which is the counterpart to that underneath the throne; apart from the location, the difference between the two is that the water of the first does not produce vegetation as that of the celestial ocean does. Other supporting entities are: The fish, an angel and — especially — a rock, usually said to be of green colour, the colour reflected by the sky. This

over stones; they in turn are carried by an angel, who stands on rocks, and the rocks are supported by the winds.

Describing the form of the universe, the fragments repeatedly state that "heaven is vaulted over the earth like a dome" (III, 11). This is the counterpart of the view from above: As noted before, viewed from above the heavens and the earths are encompassed by the footstool conveniently shaped as a hollow hemisphere (cf. III, 13). The fish, too, has a place in this dome-shaped universe: It is said to be bent in such a way that its two extremities meet in heaven (III, 36), or under the throne (III, 38, 43). This is apparently the remnant of an ancient theory which, according to more complete Syriac sources, was used to explain the eclipses of Sun and Moon; the only difference seems to be that the Syriac texts speak of a dragon or a serpent rather than of a fish.[157]

But whether it is a dragon, serpent or fish, the conclusion must be that the universe as a whole is pictured as a globe: It is "roofed over" by a dome-shaped heaven; from below it is supported by a fish bent upwards at both ends. The description may be curiously concrete and mythological; but an essential feature as the globular shape of the universe cannot be overlooked, and contrary to often repeated assertions, it must be emphasized that there is no trace of a disc-shaped earth in our texts.[158]

The most common answer to the question of the materials for the various parts of the universe seems to be that heaven — at least the one closest to earth — consists of water that is carefully enclosed (III, 17, 20). Its colour is green because being water it reflects the green colour of the rock beneath the earth (III, 16, 23). But there are other, more detailed answers as well: Fragment III, 18, for instance, lists a different substance for each of the seven heavens, namely water, white marble, iron, copper, silver, gold, ruby (in ascending order up to the seventh heaven). Above them there are just "deserts of light". Yet another fragment (III, 19) has a name for each heaven and different substances:

1. Raqīʿa — a green smaragd
2. Araqlūn — white silver
3. Qaydūm — a ruby
4. Māʿūnā — white pearl
5. Dīʿā — red gold
6. Daquā — a green hyacinth
7. ʿArībā — light

According to Kaʿb, however, "heaven is whiter than milk" (III, 22).

157 See: F. NAU: *"La cosmographie au VIIe siècle chez les Syriens"* 254.

158 Cf. S. MAQBUL AHMAD's art. on *Geography* in: EI2 II, 575 ff., esp. 576.

calculation of the duration of the Arab empire by adding the numeric values of the Qur'ānic monograms,[154] or the introduction of astrological ideas into commentaries of the Qur'ān.[155]

3) *The seven heavens and the seven earths*

(a) The seven heavens

Having 'mystified' his readers with such entities as tablet and stylus, as-Suyūṭī turns to more concrete things: "The seven heavens, and of earths their like", as the Qur'ān says (Sūra 65,12). To reconstruct the complete picture of the universe as described in the third chapter of the *Hay'a as-sanīya* we better start with the rather mysterious "Antilopentradition" (so Vitestam[156]). Its very strangeness speaks for its authenticity. It puts Allāh's throne above eight mountain goats of immense proportions; they stand on a sea as deep as the distance from earth to heaven. Only below these mysterious cosmic beings — whatever they may be — are the seven heavens, one spanned below the other. Further down follows an equal amount of earths. — This cosmological system is evenly arranged according to a scale of distances: 500 years for each unit; the sole irregular factor is that in the case of the eight mountain goats the distance of 500 years is measured only from hoofs to knees.

A variant tradition omits the eight mountain goats, and in addition places the celestial ocean between the earth and the lowest heaven. But this seems to be a step away from the more primitive, and therefore older, cosmological system that still includes the eight mountain goats. Obviously it is much easier to omit them than to invent them.

Yet another tradition, derived from Kaᶜb, speaks of the water as finally positioned under the seventh earth, that is, after it had been under the throne. This fragment is one of those derived from the ancient cosmogonies that constitute a considerable part of the third chapter. Their common feature is that the heavens and earths were originally created from the primeval ocean and then sharply divided. They add to the previously described picture of the universe the detail of a cosmic fish on top of which the earth is created. The fish swims in water, which flows

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154 See: O. Loth: "*Al-Kindī als Astrolog*" 297 ff.

155 Especially notorious is in this regard the commentary of Faḫr ad-Dīn ar-Rāzī: *Mafātīḥ al-ġayb*. — Cf. C.A. Nallino: *Raccolta di Scritti Editi e Inediti* V, 34-37.

156 G. Vitestam: *Kitāb ar-Radd* 25.

explains the difference as due to the inner development of astrology during the centuries by which Christianity preceded Islam: "In the 7th and 8th centuries A.D., however, the pagan elements of astrology were completely modified; they were so entirely hidden under a verbal formalism as to be no longer recognizable..."[150] He goes on to say that the doctrine of predestination of orthodox Islam "was, at bottom, not very far removed from the *heimarmene* of the Stoics and of many astrologers of antiquity."

Nevertheless, according to Nallino this closeness did not prepare the ground for Arabic astrology because "... the first Musalmān theologians took no heed whatever of the sciences which did not appear to have any relation to the religious content of Islām..."[151] It is not clear which theologians he had in mind; but obviously he was not acquainted with texts which came to light only after his death, texts that could not have been written if Muslim theologians did not take heed of astrology, for instance. Thus we now know from AN-NĀŠĪ's *Al-kitāb al-ausaṭ*, published by J. VAN ESS in 1971, that an-Naẓẓām approved of astrology, because in his view it shows that God knows the hidden things.[152] Neither could Nallino have upheld his position if he had studied AL-ḪAṬĪB AL-BAĠDĀDĪ's *Risāla fī ʿilm an-nuǧūm*, which is, as shown above, an appreciation of the praiseworthy aspects of the science of the stars based on the opinions of the traditional authorities of Islam.

This *Risāla* as a whole, in particular the story of the prophet Yōšhuʿa b. Nūn, proves clearly that no insurmountable gap existed between prophetic teaching and astrological calculation, to deprive the latter of any "relation to the religious content of Islām". On the contrary, the prophet has the special privilege of being able to instruct his people in astrological prediction of the future. Al-Ḫaṭīb al-Baġdādī, too, concedes "that God has established signs and indications on the stars" and even that God or His messenger may have given men the corresponding instruction.[153]

Thus there is no essential difference between prophetic and astrological knowledge, and tablet and stylus could freely exert a strong influence in favour of ever more astrology. This is probably the basis for more properly Muslim practices of astrology, such as al-Kindī's

150 C.A. NALLINO: *Sun, Moon, and Stars (Muhammadan)* 91.

151 Ibid., 91.

152 J. VAN ESS: *Frühe Muʿtazilitische Häresiographie* 110, n. 192.

153 AL-ḪAṬĪB AL-BAĠDĀDĪ: *Risāla* fol. 8 v.

the colours of the tablet, or the perpetual writing in light by the stylus, itself made of light, lose their mysteriousness when seen against this background. For the colours white, red and green, especially the latter, are not unusual in the Arabic descriptions of the sky. And it seems almost natural that the stylus must leave its impressions of light on the tablet as long as the heavens continue to turn, and as long as planets, comets and perhaps meteors — the ancient heralds of future events — draw their irregular lines across the sky.

It is, however, far more difficult to understand why AS-SUYŪṬĪ devoted a chapter of his *Al-hay'a as-sanīya* to tablet and stylus than to throne and footstool; after all, the latter were commonly identified with the two highest spheres in the Greek model of the universe. Tablet and stylus can only be guessed to include the whole sky, or, more probably, the area inside or near the constellations of the Zodiac where planets and comets draw their irregular lines; and the light to be conceived as coming from a single source, the later chapter on Sun, Moon and stars will show that the light was indeed believed to be coming from a single source, first to Sun and Moon and from there spreading over earth and heavens, Nevertheless, as late as in the fifteenth century tablet and stylus were regarded not merely as theological but also, and primarily, as cosmological entities, as as-Suyūṭī shows.

Again, the real significance of these two mysterious entities was the role they played in the intellectual development of the young Muslim community. They profoundly affected the Islamic views of revelation: The Arabic Qur'ān is a copy of the heavenly prototype that is for ever engraved on the tablet. Similarly, they became decisive factors in the theology of predetermination: The expression *qad ǧaffat bihi l-aqlām*, i.e. "the pens have dried already in this matter," was from early on the rallying-cry of the predestinarian faction.[148] For the present study the influences of tablet and stylus on the Muslims' early scientific interests, especially in astrology, are more important. If tablet and stylus did, indeed, possess a cosmological identity in the minds of the early Muslim scholars, it might be probable that they prepared the ground for the vigorous development of astrology among the Muslims.

C. A. Nallino, in his magistral article on Muslim astrology and astronomy, has pointed out that "from Islām astrology at first had a much less unfavourable reception than from Christianity."[149] He

148 Cf. J. VAN ESS: *Zwischen Ḥadīṯ und Theologie* 79.

149 C.A. NALLINO: *"Sun, Moon, and Stars (Muhammadan)"* 91.
Cf. A. HEINEN: *"A refutation of astrology in an early Arabic text"*.

It is almost impossible to establish the cosmological identity of tablet and stylus with any degree of certainty. But that both possessed a concrete identity can hardly be doubted; even their measurements are given: That of the tablet is 100 years, and that of the stylus 500 years, or 700 years, or the distance between heaven and earth (II, 3, 5, 12, 13, 16). And as in the case of throne and footstool details are given about the materials of which they are made: The tablet usually of a white pearl, on one side of a red hyacinth and on the other of a green smaragd (or a chrysolite); the stylus of reed or of light. In addition it is specified that the stylus writes with light, although another tradition mentions that its tip is split and that it drips ink (II, 15).

At its creation the stylus receives Allāh's command to keep writing down "whatever exists in God's knowledge until the day of resurrection" (II, 3). It thus became the instrument in the hand of the Creator for all His actions in this world (II, 4 and 12). But concerning the place in the universe occupied by tablet and stylus we only learn that Allāh keeps the tablet, with the marks the stylus leaves on it, somewhere under His throne.

It is only through parallel conceptions in Babylonian texts that we can grasp something of the original cosmological significance of these fragments about tablet and stylus which seems to have been forgotten already at an early date; it goes without saying that at this stage they are only parallels, not reliable explanations. An old cuneiform creation story reveals the view of the ancient Babylonians that the constellations were drawings or inscriptions of the Creator:

> Die glänzende Pracht des Nachthimmels mit seinen Sternen, Gestirnen und Sternhaufen erschien den Babyloniern wie die Bilder an den Wänden ihrer Paläste und Tempel und wie die darin eingegrabenen Inschriften (?). Nach jener Auffassung befinden sich am Himmel *uṣūrāti, iṣrāti* d.i. 'Bilder, Zeichnungen, Umrisse' ..., nach dieser erkennt man an demselben einen *šiṭru*, eine *šiṭirtu*, d.i. 'Schrift'. *Šiṭir burūmī* und *šiṭirti šamāmī* (d.i. Schrift des Nachthimmels und Schrift des Himmels) sind gewöhnliche Ausdrücke für den Sternenhimmel.[147]

Since the Arabic fragments about the tablet and the stylus do not contain such details, further parallels from the Babylonian texts need not be considered. But the brief glance at a neighbouring culture. a likely source of ideas, gives us at least a hint of the direction in which to seek the cosmological significance of this chapter on tablet and stylus. Even

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[147] P. JENSEN: *Die Kosmologie der Babylonier* 45, cf. 6 f.

In discussing the place of the earth in the whole universe, the early notion that the heavens and the earths are contained in the cavity of the footstool left its mark on later cosmological thought as well. Since the footstool is necessarily in front of the throne, not straight under it, whatever is contained in it is somewhat displaced from the axis of the whole. As a result, the earth cannot be truly in the center of the universe. This most probably is the reason behind a strange cosmological model briefly mentioned in IBN RUSTAH's *Al-aᶜlāq an-nafīsa* (= *Les Atours Précieux*); it is one of various theories concerning the form of the earth, briefly described as: "D'autres prétendent que la terre est située dans un flanc du ciel, et non au centre."[145]

It is not certain that the authors of this peculiar theory pictured the footstool in front of the throne when they invented it; but there can hardly be a better explanation. Merely to relate it to the inclination of the axis of the earth would not do justice to the text, since the earth would still remain in the center.

2) *Tablet and stylus*

Before completing the structural description of the universe by descending to the seven heavens and the seven earths, as-Suyūṭī devotes a whole chapter to two further entities belonging to the "upper regions" and the traditions concerning them, namely the tablet and the stylus, or pen. Again one wonders why such notions of Qur'ānic theology are discussed in a book avowedly dealing with the cosmos. This amazement is doubtless due to the rather modern expulsion of astrology and revelation from our scientific world view. For the medieval thinker there was a concrete link of communication between the highest being and the lower world; it could not be left to man alone to grope for knowledge. Since he was locked into the lower world, the full range of truth could only come to him from above. Thus we read in one fragment (I,8) that a snake is coiling around the throne, and that revelation descends along it as if it were a chain. This noetic linkage between the upper and the lower parts of the cosmos is more broadly elaborated in the chapter on tablet and stylus of the *Hay'a as-sanīya*. In it there may be a synthesis of two originally separate views of revelation. The noetic aspect of the two entities was underscored by their identification respectively with the universal soul and the universal reason when neo-platonic philosophy was grafted on the tree of Arabic culture.[146]

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[145] G. WIET (transl.): *Ibn Rusteh. Les Atours Précieux* 21.

[146] Cf. C. HUART: *Le Livre de la Création* I, 151 and 155.

Qur'ān, but also with that of much older Egyptian texts, that the heavenly bodies are floating in the sky.[144]

This cosmological model of the whole universe that starts from Allāh's throne and the footstool underneath, developed on the preceding pages, follows closely the Qur'ānic texts and their earliest explanations. For the development of science during the centuries of Islamic history it is significant that it was never *in toto* discarded, even after the introduction of the more satisfactory Greek models. Of special interest is how such seemingly theological entities as throne and footstool affected and modified their adoption and further elaboration. Inspite of the different world views among the Greeks and the early Muslims, these entities did not obstruct scientific development, but on the contrary rendered it less difficult. These two notions could easily assume the specifications attached to the highest spheres in the Greek models, even needed them, because revelation had added few details. At the same time they made Muslim cosmology immune against the Greeks' pagan identification of God with the highest sphere, since both — even the throne — were merely parts of creation.

In the discussion of ad-Dārimī's *Kitāb ar-Radd ʿalā l-ǧahmīya* it was shown how the traditions about the throne became the most important weapon of the orthodox against those intellectuals who wanted to introduce pantheist ideas into Islam. It is clear from this example that the cosmological entity of the throne loomed large in the discussions concerning Allāh's place in the universe during centuries of Islamic history. Thus it is hardly an exaggeration to state that it was due to the throne that almost all theological treatises continue to deal fairly extensively with the celestial spheres. The throne saved Allāh from theological commixture with creation, yet it kept Him within the universe, and nature in the books of theology.

The footstool, too, was given a lasting but somewhat different place in Muslim cosmology and astronomy: When Muslim astronomers took over the astrolabe they fittingly called the triangular piece of metal on top of the disk of the instrument the *kursī*. There hardly could have been a better place to serve as constant reminder of traditional Muslim cosmology. But it also occurred frequently in the discussions about the form of the universe and the place of the earth in it, the usual subject not only of the beginning chapters in astronomical and cosmological books, but also often of theological treatises. The question whether the universe is quadrangular or circular has already been mentioned before.

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144 See: F. BOLL: *Sphaera* 169 f.

lar as the throne most likely is. Heaven, however, is explicitly stated to be vaulted and not quadrangular.[141] Thus the observer, standing in the center of a circular horizon, need not think further, i.e. how to "square the circle", or how to find the material necessary to fill the empty spaces at the four corners of a quadrangular footstool. Even though such notions as "throne" and "footstool" may seem naive to the modern reader, he has to admit that these early scholars payed much attention to the details of their cosmological picture of the world.

The earthly observer, who looks at the footstool from below, finds himself in a dome-like hemisphere. This appears quite natural; however, the description of the universe becomes unnatural, or even forced, when it turns to the interior of this cavity; "All the water is inside the footstool and rests on the wind" (I, 3). This is reminiscent of the story in Genesis of the Creator dividing the waters above and below the celestial vault.[142] The Qur'ān speaks of an "overflowing ocean" (Sūra 52,5), and the commentator Rabīᶜ b. Anas explains that this is "the upper water under the throne" (I, 11). Elsewhere he also speaks of the lower one, namely that under the lowest earth (I,17). Another tradition speaks of a succession of gigantic oceans, each one infinitely bigger than the next lower one, eventually leading to the throne above.

The details may differ considerably, but all these fragments of cosmological theories agree that the space between the footstool, or the whole throne, and the earth is filled with water; but the water, in some unspecified manner, is suspended and rests on the wind (I, 3). Obviously there is no place for Aristotle's ether; the contrast between diverging conceptions of the world could hardly be greater. The existence of an ocean, or oceans, in the upper regions of the universe may have been suggested by rainfall, in the desert a special blessing from above that brings forth miraculous fertility on earth (I, 17).[143] Or it may have been assumed that identical colour (for the Arabs it was green) could only be attached to an identical substance. Yet another "reason" may have been that the celestial bodies, not their spheres, needed a substance on which to travel. And water was not only a smooth "highway", but also transparent. This argument is in full agreement with the view of the

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141 Cf. fragment III,16. — It is interesting to see how Ibn ᶜArabī combines the two shapes; see his *Al-futūḥāt al-Makkīya* III, 421 ff.

142 Cf. *Genesis* 1,6 f.

143 Aristotle expresses the same conjecture; see: *Meteorologica* 70 f.: I, IX 347 a 1-8.

noteworthy that — contrary to the modern conception — the outer reaches of space in this old cosmological model are the realm of light, not of utter darkness.[138a]

According to other traditions, the substance of the throne is more concrete: In Saʿīd aṭ-Ṭāʾī's view it is a red hyacinth. This view apparently became the prevalent one; it also played an important role in later Ṣūfī tradition. This treatise does not elaborate why this precious stone was selected to form the throne of Allāh. Colour can hardly have been the decisive factor, because according to another tradition (I, 15) the throne was created from a green emerald.

The footstool is said to be attached to Allāh's throne, or to be standing in front of it. Its concreteness is underscored by the curious detail that it makes a creaking noise like a camel saddle. This may be merely playful imagination, or a parallel to the spherical harmonies of the Pythagoreans (although the creaking of a camel saddle is hardly music). No reason is given why the *kursī* makes a creaking noise. But in another text, quoted in AṬ-ṬABARĪ's *Tafsīr*,[139] the prophet Muḥammad is reported to have in fact heard this creaking sound; however, there it is ascribed to heaven *(as-samāʾ)*, apparently on account of its fullness. The latter idea agrees with the Arabic idiom, as described in LANE's *Arabic-English Lexicon*.[140] For this reason this is probably not a fragmentary explanation of a meteorological phenomenon such as thunder.

The form and location of throne and footstool in relation to the rest of the universe below them is of greater significance for early Muslim cosmology and its influence on later developments. It first conveys the impression that the whole universe is viewed as a structure composed of horizontal levels: Uppermost the throne; below it the footstool; then the seven heavens and the seven earths, one on top of the following. Indeed, this may have been the most primitive picture of the whole universe.

But one fragment shows that this cosmic model was soon modified into one that did justice to the globular appearance of the sky spanned over the earth like a dome. With this in mind, it seems, the footstool was described as hollow, so that its cavity could be pictured as containing the world underneath. If anything can be inferred about its shape from comparisons with a circle or ring on the surface of, or a dome in the middle of, the desert, the footstool seems to be circular, not quadrangu-

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138a Cf. R. RUBIN: *"Pre-existence and light"* 62-119.

139 Aṭ-Ṭabarī: *Ǧāmiʿ al-bayān ʿan taʾwīl al-Qurʾān* XVII, 13: On Sūra 21, 21.

140 Cf. my commentary, ad I,22.

discerned. The constituting elements of Muslim science at this initial stage must now be discussed. For this purpose a synthetic survey of the cosmological fragments contained in AS-SUYŪṬĪ's *Al-hay'a as-sanīya* will be most elucidative. Inner consistency, wherever it can be found, will be the guiding principle, not the model of later treatises on the same subject, lest we be led into anachronisms. But P. Jensen's reservations with regard to the cosmology of the Babylonians apply here as well: A comprehensive and rationally consistent system of cosmology can hardly ever have existed in the minds of the early Muslim scholars;[136] and even if it did, the surviving fragments are too disparate to reconstruct such a system.

1) *Throne and footstool*

As-Suyūṭī's description of the cosmos begins with a chapter on Allāh's throne and the footstool below it. The idea is taken from the Qur'ān, for he starts with the quotation of two verses in which they are mentioned (Sūras 9,129 and 2,255). However, he doubtless conceives of both not merely as theological, but as true cosmological entities. As noted above, throne and footstool, at that time, were generally identified with the two highest spheres, presumably because there was no, or hardly any, disharmony. Throne and footstool are above the heavens and the earth(s), and yet of the same concrete reality. Thus they can be measured together with them, and they are described as being in physical contact with each other and with the lower parts of the world.

The texts leave little doubt that throne and footstool are of a physical nature; therefore, not surprisingly, these early 'astrophysicists' inquire about the matter,the substance of which these two highest entities are supposed to consist. The answers vary considerably: One theory encompasses the whole creation, where everything is supposedly fashioned out of four elements, namely water, wind, light, and darkness.[137] Accordingly some traditions describe the throne as created out of Allāh's own light, conceivably by way of clustering that divine substance, light, which is also said to fill the immense space beyond the heavens and the throne. The question remains whether this substance is identical with the ether of Greek cosmologies, and particularly with the "artistic fire" (*nār ṣanāʿīya*), according to the *Placita Philosophorum* the highest being of the cosmos for the Stoics.[138] But whatever this substance may be, it is

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136 Cf. P. JENSEN: *Die Kosmologie der Babylonier* [2]1974; 257.

137 See: Conclusion of as-Suyūṭī's text; cf. my commentary, 239 f.

138 See: H. DAIBER: *Aetius Arabus* 120f.: I, 7,33 = Diels 306 a.

knowledge is occasioned by the Qur'ānic revelation, in the language of God's creation, does it reflect His actions in the universe and is thus itself religious. Although the traditional form of authentication by *Isnāds* is used, there is a basic difference between the traditions of the *Mufassirūn* and the *Fuqahā'*: The former are satisfied with transmitting the views of an early Muslim scholar, while the latter try to establish the *Sunna*, the practice of the Prophet, in order to bring that of the community into accord with the norms of prophetic revelation. As a result, prophetic revelation is the ultimate authority for the *Sunna*, but the *Mufassir* may actually transmit the knowledge of the pre-Islamic, Jewish, Babylonian, Persian or Egyptian scholar from whom his own cosmological model is ultimately derived.

To characterize the role of the early commentators of the Qur'ān, the following conclusion seems inescapable: When the *Mufassir* collects all the information available to him concerning the phenomena of nature, or when he puts together the elements of a cosmological theory of his own, he does so out of a genuine scientific interest, although he is occasioned by the allusions of the Qur'ānic revelations. Thus genuine scientific interests, not utilitarian expectations or all-pervasive theological thought, will best explain the beginnings of a distinctly Muslim science. Our fragments confirm the more general judgment of W. Hartner and M. Schramm who write:

> As concerns the motives underlying this phenomenon, it may be true that practical aims prevail, and this has been emphasized time and again. But, to those who prefer reading manuscripts to rereading what others have said about the matter, it becomes evident that the true stimulus or incentive, already in early ᶜAbbāsid times, perhaps even in the late Ummayad period, has been a genuine desire for factual knowledge and understanding. In fact, this desire, and the circumstance that Islamic scientists never got tired of quenching their thirst for knowledge, is an essential characteristic of medieval Islam.[135]

3. The elements of the earliest Muslim cosmology. A systematic survey of as-Suyūṭī's fragments

The preceding chapters were concerned with preliminary clarifications regarding the earliest manifestations of interest in natural phenomena by the early Muslims and their motivation, as far as this can be

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[135] W. Hartner and M. Schramm: *"Al-Bīrūnī and the Theory of the Solar Apogee: an example of originality in Arabic Science"* 206.

techniques being introduced. As Yushkevich notes,[134] the technical terms used in early Arabic mathematical treatises reflect the background of the merchant class. Nevertheless, the complication of the inheritance laws through the Qur'ānic revelations was probably a much stronger stimulus for the development of new mathematical techniques, paving the way for a complex algebra.

However, all these factors mentioned in studies of the beginnings of Muslim science remain, in varying degrees, but yet distinctly, on the level of techniques once invented and then used by generations of practitioners. But techniques, not even an agglomeration of them, do not suffice to solve the question of the origin of Muslim science and its development. The earliest pieces of scientific writings, explanations of the phenomena of nature, and the circumstances surrounding their composition present an entirely different picture.

As shown above, the evidence for the earliest attempts of the young Muslim community to explain the phenomena of nature is found in the fragmentary cosmological theories adopted by the early Qur'ān commentators. Therefore the suggestion must be rejected that Muslim science began with the astrological superstitions of political potentates who were seeking security and guidance in the stars. Nor did it begin as a by-product of the greed for precious metals which caused gifted and influential people for centuries to pursue the crude experiments of alchemy.

The context in which the collection of cosmological fragments arose was the reflection on Qur'ānic texts. But evidently the early Muslim scholars desired more than a mere religious or theological interpretation of the sacred text. Like the mystics whom this text guided to their own religious experiences, the scholars interested in the cosmic phenomena used the numerous Qur'ānic references to them as 'question marks': They would try to find explanations, either through their own efforts or by interrogating people with access to the achievements of earlier cultures. If Abū š-Šayḫ's insistence on the practice of *tafakkur* corresponds with the preoccupations of the early Muslims, it was not even curiosity alone that inspired this quest for greater knowledge of nature, but more properly the religious desire to expand the faithful's awareness of God's greatness and wisdom, to serve the Creator better by "making Him ever greater".

Yet, the knowledge thus acquired by the *Mufassir* never became part of the revealed message of Islam. Unlike Ḥadīṯ, Tafsīr never became a source of Islamic religion or law in the formal sense. Only in so far as this

[134] A.P. Juschkewitsch: *Geschichte der Mathematik im Mittelalter* 180.

EUCLID's *Elements* and PTOLEMY's *Almagest* into Arabic.[130] If the source can be trusted, Sufyān aṯ-Ṯaurī not only was so familiar with the problem that he at once recognized its master, but he is portrayed as superior to this scholar in his own field. — It is noteworthy that Ibn Abī Ḥātim is also one of the most often quoted sources in AS-SUYŪṬĪ's *Al-hay'a as-sanīya;* he may have had a special interest in reports that emphasized the superiority of more traditional scholars. But even if he had such a bias, the story does not need to be a mere invention.

The texts that constitute the *Hay'a as-sanīya* cast some light, too, on the reasons for the development of Muslim science, that is why the early Muslims turned to the study of nature. For many historians it has been, and still is, a significant problem for which numerous and diverse answers have been suggested. Since new evidence is considered here, it may be briefly examined from this point of view.

Some historians, pointing to the titles of early translations, have suggested that the selfish interest of rulers in astrological guidance, or promises of riches through alchemy, may have been powerful motives for the introduction of the natural sciences. A.C. Crombie believes that the desire to control the forces of nature through magic was so characteristic of Arabic science that it gave a similar direction to Latin Medieval science about the period of translations.[131] With greater justification, other writers have emphasized the undeniable need for well-trained physicians. Even in Muḥammad's lifetime a physician trained in the renowned medical school of Gundēšāpūr is said to have demonstrated to the Arabs the advantages of his science.[132] But with Ben-David one will hesitate to stress the significance of this practice-oriented discipline in the development of the sciences.[133] Nor can the practical need for a fixed calendar, which the Arabs satisfied already in pre-Islamic times by a few rather crude astronomical observations, have been an influential factor for creating early Muslim science. This knowledge had long cristallized into a sterile technique, and the Prophet's reinstitution of the lunar calendar rendered it obsolete and devoid of further influence.

As regards mathematics, the expanding trade relations in the Muslim empire may have contributed to more and better computing

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130 Cf. H. SUTER: *Die Mathematiker* 9, n. 16. Also: P. KUNITZSCH: *Der Almagest* 65.

131 A.C. CROMBIE: *Augustine to Galileo* I, 52.

132 Cf. above note 10: R. KÖBERT: *"Al-Ḥārit B. Kalada"*.

133 See: J. BEN-DAVID: *The Scientist's Role in Society* 25 f.

who became a Muslim during the life-time of the Prophet, and who is reported to have possessed books on cosmology (one of them may have been the above-mentioned *Kitāb al-ᶜaẓama*). They became rich sources of information on pre-Islamic Arabia as well as on the Jewish traditions. The same holds true for the younger Wahb b. Munabbih who may or may not have been of Jewish descent. If the *Mufassirūn* — taking their inspiration from the Qur'ān, but not considering all knowledge to be part of revelation — were the first to collect and expand cosmological theories, the roots of Muslim science must be sought among them. It can no longer be regarded solely as a foreign import by order of some ruler; but in its beginnings it must have had intimate connections with the religious community, one generation after the Prophet and his Companions.

The large number of traditions ascribed to Ibn ᶜAbbās' students in *Tafsīr* show that the interest in the natural phenomena continued to grow among the commentators of the Qur'ān. Thus the pieces of information transmitted from generation to generation become more detailed with the progression of time, even including measurements in figures for Sun, Moon, and stars, or assuming an apparently physical cause for the movement of the Sun. However, our historical sources do not identify the additions these scholars probably made to the body of natural knowledge slowly accumulated by the early Muslim community.

But the example of a *Mufassir* and influential scholar of the next generation, Sufyān aṯ-Ṯaurī (died in 778 A.D.), proves that the traditional scholars made progress in the sciences and even took up mathematics.SUFYĀN AṮ-ṮAURĪ's *Tafsīr*,[128] one of the earliest that is still extant, continues to transmit the old cosmological traditions, apparently without additions. But other sources indicate that this religious and legal authority even surpassed an expert mathematician. According to a carefully attested report by Ibn Abī Ḥātim (died in 327 H./938 A.D.),[129] Sufyān aṯ-Ṯaurī engaged in a contest with a well-known mathematician and proved him wrong in all questions presented to him. What kind of questions these were is not stated; but it is said that Sufyān aṯ-Ṯaurī on the spot associated them with Ḥaǧǧāǧ, for only he was an expert in such questions. Therefore the problems dealt with must have been a special branch of mathematics. Most probably this Ḥaǧǧāǧ was the man who gave the study of mathematics its strongest impulse by translating

[128] SUFYĀN AṮ-ṮAURĪ: *Tafsīr al-Qur'ān;* ed. by ᶜARŠĪ; Rampur, 1965.

[129] IBN ABĪ ḤĀTIM AR-RĀZĪ: *Taqdimat al-maᶜrifa li-kitāb al-ǧarḥ wa t-taᶜdīl* 125 f.

belonged to the "people of the book" or the "people of ignorance". Thus they anticipated the turn to the natural sciences which officially is supposed to have happened only some eighty years later by direct command of the caliph.

According to traditional accounts, Ibn ᶜAbbās, the Prophet's nephew, wrote to a certain Abū l-Ǧald inquiring about the substance of the heavenly sphere.[122] Very little is known about this man; but he is reported to have studied old books, and his daughter testified that he regularly recited the Qur'ān as well as the Torah (presumably in Hebrew). He is also referred to as an authority in geography, and he is said to have calculated the extension (circumference?) of the earth.[123] Others connect him with traditions about the Prophet; thus AṬ-ṬABARĪ, in his *Kitāb aḫbār*,[124] derives information concerning the beginning of Qur'ānic revelation from him. And de Goeje notes: "Cognomen Abu 'l-Djald habuit Djailān ibn Farwa al-Asadī Basrensis, traditionarius, a quo traditiones accepit inter alios Abū ᶜImrān al-Djūnī."[125]

Regardless of his personality or the sources of his scientific knowledge, for the development of Muslim science it is significant to learn that a *Mufassir* — and an authority like Ibn ᶜAbbās at that — did make such an inquiry by letter. For a theologian the question would not seem to have any interest, and the answer — that the heavenly sphere consists of an "enclosed wave" — hardly sufficient value to be included in the collections of traditions. It was probably through Ibn ᶜAbbās that this ancient cosmological theory of the Babylonians, later apparently shared by al-Fazārī,[126] became available to all Muslim scholars. In this way it may have played a role in the discussions of the later astronomers about the stars moving by themselves or through the motion of the spheres.

Other informants of Ibn ᶜAbbās, and the other *Mufassirūn*, were Kaᶜb al-Aḫbār and ᶜAbdallāh b. Salām, the representatives of the so-called "jüdisch gefärbte Schule".[127] The former was a Rabbi from the Yemen, who was much interested in the ancient cultures of that area; the latter was a Jew

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122 See below fragments III,20 and VIII,19.

123 See: I. GOLDZIHER: *Die Richtungen der islamischen Koranauslegung* 67, n. 4. Cf. AL-MUQADDASĪ: *Aḥsan at-Taqāsīm fī maᶜrifat al-aqālīm* 136 (transl. by A. Miquel).

124 AṬ-ṬABARĪ: *Kitāb aḫbār ar-rusul wa l-mulūk;* ed. by M.J. de Goeje as *Annales* I, 1142.

125 M.J. DE GOEJE (ed.): *Aḥsan at-taqāsīm fī maᶜrifat al-aqālīm* 62, n. a.

126 Cf. my commentary, ad I, 11,

127 Quoted from F. SEZGIN: GAS I, 26.

as well as of the moderns (*ʿulūm al-awwalīn wa l-āḫirīn*) are contained in it. From the Prophet they pass on to the Companions, especially the most learned, the four caliphs, Ibn Masʿūd and Ibn ʿAbbās, and then to those who followed them. Gradually a decline begins, the spirits and the intellectual powers of the next generation decrease, and specialized study of individual disciplines results: That is, the various methods of establishing the Qur'ānic text, its readings and interpretations, grammar, conceptual analysis, the *uṣūl ad-dīn* and the *uṣūl al-fiqh*, traditions and history, rhetoric, the interpretation of visions, the *farā'iḍ*, the study of the signs connected with night and day, Sun and Moon, the stations, the stars, the Zodiac, time-keeping, and many other sciences, among them medicine, tables, astronomy, geometry, algebra and astrology. All these are in some way rooted in the Qur'ān, and as scientific disciplines to be studied, not with the results they offer. If these roots are only thought of as stimulating allusions in Qur'ānic passages, this historical theory of al-Mursī may not be as wrong as it appears at first glance.

The cosmological fragments examined in the present essay to some extent confirm al-Mursī's theory; they, too, connect the beginnings of cosmological thought with the efforts of the early *Mufassirūn* to explain difficult Qur'ānic passages. The earliest Muslim treatises offer historical testimony that soon after the Prophet's death the young Muslim community found it increasingly difficult to understand every detail of revelation. Numerous strange expressions had to be translated into ordinary parlance or provided with the necessary background. Thus the first commentaries on the Qur'ān, or on parts thereof, often give just synonyma for unusual words.[121]

But that is not all: Their intellectual curiosity caused the early commentators to assemble brief allusions to cosmic phenomena and, by undertaking extensive inquiries even by letter, to piece together the fitting cosmological models. In the Qur'ān these phenomena are introduced as 'signs', illustrations of the greatness and wisdom of the Creator. According to the experts, these *āyāt* constitute the Prophet's earliest message. The *Mufassirūn* did not regard these 'signs' as mere teaching-aids for unbelieving pagans, to be discarded when they had become convinced of God's existence, lest they be distracted from the one and only important thing. For them, these 'signs' had an enduring value, one that grew with increasing knowledge of the 'signs'. They shared their knowledge and did not hesitate to draw on that of outsiders, even if they

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[121] Cf. IBN ʿABBĀS: *Al-Luġāt fī l-Qur'ān;* ms. Istanbul, Esad Ef. 91,3: fols. 104 r-112 v.

references to cosmic phenomena, and thus also of those phenomena themselves, gave birth to Muslim science.

The stress is evidently on 'Muslim' because the famed kingdoms in South Arabia may have already had a more developed 'Arabic science'. Yet, many of our fragments suggest that these pre-Islamic cultures of Arabia may have preserved numerous pieces of cosmological and meteorological theories taken over by the early *Mufassirūn*. These cultures still await excavation, and all literary evidence (over and above the short, often enigmatic, inscriptions) is contained in the writings of the early Muslims. Therefore our research is restricted to the Islamic period. Anyway, with the Qur'ān a new culture came into being in which the investigation of nature became an important component. To study its function in this new culture, its inherently distinctive character, must be the central task of the historian of Arabic science.

The Qur'ān inaugurated Arabic literature, and therefore all its intellectual pursuits. As a revealed book it is, of course, placed before and above any act of the human intellect; with its message, however, it became the most powerful stimulant of Arabic thought over the centuries. The historian of science can study only the results of its impact, not the revealed knowledge itself. He is on the same ground as the historian of Islamic mysticism; he, too, can identify the Qur'ānic passages that have inspired the meditations of the mystics, but he cannot derive these passages from the mystical experiences of the Prophet himself, though it is not denied that he at times had such experiences and used the revealed texts for his own religious practice.[119] In the same way the historian of science can consider the cosmological passages of the Qur'ān as intellectual stimulants for the early Muslim scientists, without declaring them to be the scientific thought of Muḥammad. Or he could call the Qur'ānic conception of God predominantly cosmological, without calling it 'a book of cosmology or theology'.

As-Suyūṭī's work *Al-itqān fī ʿulūm al-Qur'ān*[120] contains an interesting résumé of the development of the sciences in Islam starting from the Qur'ān. It is a quote from the lost *Tafsīr* of Ibn Abī l-Faḍl al-Mursī, who died in the year 655 H./1257 A.D.. Unlike the modern Muslim apologists who find the results of modern physics already anticipated in the Qur'ān, al-Mursī states that the sciences of the ancients

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[119] Cf. L. Massignon: *Essai sur les origines du lexique technique de la mystique musulmane* ²1954; p. 110.

[120] As-Suyūṭī: *Al-itqān fī ʿulūm al-Qur'ān* ³1370/1951; pp. 126-128.

consulting an expert. But an expert had to exist before the political leader could ask him for his expertise.

A similar situation must have prevailed in the second half of the eighth century. Therefore great care should be exerted in the interpretation of historical accounts about the beginnings of Muslim science: They do not exactly portray the actual beginnings of Muslim science, but rather its appearance at the court of the caliph in Baġdād. Further, they reflect the restriction of what is considered scientific to the contents of foreign books. These could only become predominant when enough had been translated to constitute a branch of Arabic literature. However, they do not deal with the practice of science in a wider sense that probably anteceded the impact of the translations.

The cosmological fragments of the *hay'a as-sunnīya,* however, lead us to a quite different class of Muslim scholars who were the first to reflect on the phenomena of nature and their explanation. They are, almost without exception, concerned with explaining the difficulties of the Qur'ānic text; they may merely have been the first intellectuals in the young Muslim community, since the various sciences were hardly distinguished already at that early time. Foremost among them is ᶜAbdallāh b. ᶜAbbās, the greatest authority in Qur'ānic exegesis. He, too, was a political figure; but he kept his position as ᶜAlī's governor in Baṣra for one year only and then devoted the rest of his life, up to his death around the year 68 H./687 A.D., to scholarship. His intellectual activities do not have the appearance of princely patronage. Rather he was the center of a group of scholars and students, though he benefited himself by association with many contemporary learned men.[118]

However, an examination of the fragments ascribed to Ibn ᶜAbbās and his colleagues or students makes it obvious that they did not yet develop a consistent cosmological system of their own, nor did they consciously transmit such a system based on Muḥammad's revelations or esoteric teachings, as later traditional scholars suggest. They collected fragments of such systems from any source and adopted them to fill the gaps in their understanding of the Qur'ān. Compared with the later translation period, we might say that here the first intellectual synthesis of Islam through the integration of pre-Islamic or foreign cosmological ideas into its own structures of prophetic revelation emerges. The apparent desire to acquire a full and rational understanding of enigmatic

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[118] Cf. below fragments III,20; VIII,19: Abū l-Ǧald is asked for information. CF. GAS I, 25 ff.

into oblivion at an early date; as mere fragments they had a natural tendency to outgrow themselves, and they were probably soon eclipsed by the more developed theories found in the translations and the commentaries thereon. To bring these deepest roots of Muslim science to light again, their seeds, the conditions for their growth, the larger units into which they developed must be searched for. Above all, as much information as possible must be gathered about the men associated with the earliest results of cosmological thought in Islamic history.

The social role of the scientists in the Islamic community, and therefore of the sciences, seems predetermined right from the outset: In the common account of the beginnings of Muslim science it is assumed and often emphasized that they coincide with scientific activities, or products being mentioned for the first time, as having aroused the interest of the caliph or some other influential political figure. Thereafter, Muslim science came into being by "imperial decree" of an official representative of the community and continued to exist under his protection and promotion. Whether Ḫālid b. Yazīd had the first translations made, or whether that movement started in Baġdād by order of the caliph Hārūn ar-Rašīd, when Indian astronomical treatises were brought to his court, in either case a highly placed political figure is credited with initiating the auspicious turn to the natural sciences.

Modern historians of Arabic science often praise the continuing patronage it enjoyed from caliphs, princes and viziers over the centuries of its hey-day; and the role of the rulers in the development of the sciences is valued highly, especially in studies by German scholars. They overlook the confiscation of libraries, and the forced stay of an al-Bīrūnī can even be described as the laudable patronage of a Maḥmūd.

But the rulers — as J. Ruska emphasizes in his studies on Arabic Alchemists[116] — must have had knowledgeable experts to appreciate and translate the foreign scientific treatises. Thus it must be assumed that the corresponding sciences were already present in Muslim culture. An incident mentioned in the traditional texts will illustrate this point: Muᶜāwiya b. Sufyān b. Ḥarb was asked about the Milky Way, the Rainbow and the place of sunrise. He asked: "Whom do I have for this?" And when Ibn ᶜAbbās' name was mentioned, he wrote to him for an answer.[117] Unless this story is invented (to give Muᶜāwiya's opinion greater weight?), it presents an early example of a political figure officially

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116 J. Ruska: *Arabische Alchemisten;* I., II *Jaᶜfar al-Ṣādiq, der Sechste Imām* 6.

117 See below fragment IX, 8.

foreboding the death of Muʿāwiya and the accession of Yazīd. This hints that the horoscopes might have been computed towards the end of the seventh century — a date which is in good agreement with our conclusions concerning the date of one of al-Sijzī's sources from an analysis of his geographical references. This early date precludes the use of a Zīj written in Arabic; one must assume that the original computer used either a Syriac or Greek table, or more likely, a Pahlavi one. The fact that he gives dates according to the Syrian Seleucid calendar does not contradict this hypothesis.[113]

The text is quoted here because it corroborates what al-Ḫaṭīb al-Baġdādī's traditional sources for his treatise on the science of the stars indicate, namely that already in Muʿāwiya's time astrologers were employed to practice their art.[114] It is related that his opponent ʿAlī at one point turned against them and banished them from his army, because the Prophet did not use astrologers either.[115]

Thus, whenever the traditional sources can be trusted, AS-SUYŪṬĪ's *Al-hay'a as-sanīya*, and through it the ninth, tenth and eleventh century works on which it is based, can shed a good deal of light on the earliest phase of Muslim science. On the whole they show that the Muslims already observed and investigated natural phenomena long before the representatives of the *ʿulūm al-awā'il* became identifiable as a group and allegedly monopolized that activity. Even though the exact time of origin of all the various fragments of old cosmological theories cannot always be established, nor the city or province of their first presentation to the public be determined, the methods of transmission allow them to be traced to Muslim scholars of the first generation. They worked in the contemporary centers of Islamic culture of the Ḥiğāz, Southern Irāq, and Syria; and most of them are also known for their contributions to other branches of learning, which at that time can only be expected.

The cosmological fragments, handed down over the centuries with other traditions and collected in ABŪ Š-ŠAYḪ's *Kitāb al-ʿaẓama*, IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar*, etc., confirm the views of modern scholars like F. Sezgin on the basis of other evidence: The natural sciences dealing with various aspects of the cosmos took roots in the young Muslim community at the same time as the other sciences, that is, long before the second half of the eighth century. It cannot surprise that these roots fell

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113 *The Thousands of Abū Maʿshar* 114 f.

114 See: AL-ḪAṬĪB AL-BAĠDĀDĪ: *Risāla* fol. 9 v. A doctor was employed, too; see IBN ABĪ UṢAYBIʿA: *ʿUyūn* I, 116.

115 Ibid., fol. 9 v.

these "Islamic concepts" must have been part of the same intellectual disciplines.

In any case, ABŪ Š-ŠAYḪ's *Kitāb al-ʿaẓama* and the many other sources of AS-SUYŪṬĪ's *Al-hay'a as-sanīya* testify to the fact that already contemporary with the earliest commentaries on the Qur'ān Muslim scholars observed the phenomena of nature, reflected on them, learned from other people and transmitted their knowledge. All these are elements of science. One may wish to have better historical evidence than just traditions; but the historian has to accept his sources no matter where and in which form they are. Besides, to obtain a generally valid idea about the place of science in Muslim culture the whole range of its literature has to be considered, not only the specialized works of a later date.

Thus, by leaving the old tracks of clear-cut classifications and examining early Arabic literature as it is, simply asking what it tells about observation and investigation of nature, our views about the beginnings of Muslim science may differ considerably from current notions. A book listed in the catalogues as a work on mysticism may then be found to be a mine of information on early cosmology; a book on rain may actually be a work on meteorology and not on lexicography, as many others are; and a *Tafsīr* work may not only contain explanations of theological problems, but of numerous natural questions as well. The historian of Arabic science in this regard can follow the example of his colleague in Hellenistic or Latin Scholastic studies.

The references in Arabic literature to calendar experts or physicians in early Arabia demand that scholars extend their research beyond the time of the earliest translations.[111] P. Kunitzsch points to a number of cases of early Arab interests in scientific questions;[112] D. PINGREE, in his work *The Thousands of Abū Maʿshar*, draws attention to two instances:

> A table of 15 horoscopes of historically significant lunar and solar eclipses and other events related to the early history of Islām. The latest date to appear is 22 Dec. 679 (IV 15), that of a lunar eclipse

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[111] See: R. KLINKE-ROSENBERGER: *Das Götzenbuch Kitāb al-Aṣnām des Ibn al-Kalbī* 29 (Arabic text); 54 f. (transl.); 127 (Commentary): The calendar makers were responsible for the defilement of Abraha's church.

Further: R. KÖBERT: "*Al-Ḥārit B. Kalada*"; in: F. Altheim — R. Stiehl: *Die Araber in der Alten Welt* IV, 33 f. — But the historicity of these reports is rather doubtful; see: M. ULLMANN: *Die Medizin im Islam* 19 ff.

[112] In: *Der Almagest. Die Syntaxis Mathematica des Claudius Ptolemäus in arabisch-lateinischer Überlieferung* 125, n. 40.

original interest in these new sciences, or modified their reception, for instance, by selectively favouring particular branches; not to speak of the presence of elements and methodological principles that could have entered into an amalgam, though perhaps as a minor ingredient, with the newly imported materials.

In this connection it seems helpful to consider the three "laws" which according to S.H. Gibb govern the adoption by one culture of elements from another. They are the following:

> First law: ... cultural influences (... not purely superficial adjuncts, but genuinely assimilated elements) are always preceded by an already existing activity in the related fields, and ... it is this existing activity which creates the factor of attraction without which no creative assimilation can take place.
>
> Second law: The borrowed elements conduce to the expanding vitality of the borrowing culture only in so far as they draw their nourishment from the activities which led to their borrowing in the first place. If they develop so luxuriantly as to substitute themselves, or threaten to substitute themselves, for the native spiritual forces, they become destructive, and not constructive, elements ... a living culture allows the borrowed elements to develop to the extent that they are adaptable to and blend with its native forces, but resists with all its power their over-luxuriant growth.
>
> Third law: ... a living culture disregards or rejects all elements in other cultures which conflict with its own fundamental values, emotional attitudes, or aesthetic criteria. Attempts may be made to graft them, but the grafts to not "take" and simply die off.[108]

Yet, in S.H. Gibb's view, strangely enough, "there was nothing in the primitive Arab tradition or in the Koran, as originally understood, to account for this apparently sudden development", i.e. "the movement of translation of Greek philosophical and scientific works into Arabic in the eighth and ninth centuries".[109] "The already existing activity in the related fields" is for him the "conflict within the Muslim Community between Hellenistic traditions and the primitive formulations of Islamic concepts" caused by the influx of Hellenistic peoples.[110] Hence, whatever "the primitive formulations of Islamic concepts" were, they conflicted with the philosophical and scientific concepts of the Greeks and exerted their own influence in the corresponding fields. Even if less sophisticated,

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108 H.A.R. GIBB: *"The Influence of Islamic Culture on Medieval Europe"* 85 ff.

109 Ibid., 85.

110 Ibid., 85 f.

long before any translation had appeared. The products of this thought may not strike us as impressively scientific; one might rather term them, with P. Kunitzsch,[106] "pre-scientific", if that were not such an uncomfortably vague adjective that one might find written across the pages of the history of science well into recent times. But the fact remains that these early scholars tried to find explanations of the phenomena of nature and to give systematic descriptions of the universe. For this reason we may rightly consider the possibility that scientific thought and observation started earlier in Islamic history, and in a quite different manner, than is generally assumed.

2. Reflections on the beginnings of scientific interests in the Muslim community

In his article on "*The Fragments of the Works of Yaᶜqūb Ibn Ṭāriq*" David Pingree makes an observation concerning the beginnings of Muslim science that points in the same direction; he writes there:

> Many absurd assertions have been made concerning early Islamic science by historians who have not had the time or ambition to read the original sources but who are content to continue the historiographic tradition begun in Spain in the twelfth century.[107]

The same could be said — it seems to me — with regard to the clear-cut division between the sciences based on the bibliographic classifications of authors like Ibn an-Nadīm. For, if all Muslim investigations of nature are pressed into the category of the *ᶜulūm al-awā'il* (= the sciences of the ancients) precisely and primarily the beginnings of Muslim science will be utterly obscured. That the *ᶜulūm al-awā'il*, especially the works and methods of the Greeks, dominate all such investigations of the Arabs at a later date is not surprising. The modern historian, therefore, will in retrospect be tempted to assume that this was always so, that Muslim science came into being when the works of the ancients became available through translations. These were supposed to have appeared on the scene of Muslim scholarship from "out of the blue"; on a scene that was assumed to have been in no way, or only negligibly so, prepared for these new, old sciences. Furthermore, no factors were thought to have been present in early Muslim scholarship that might have triggered the

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[106] In: Art. on *Ibn Qutayba*, in: DSB XI, 246.

[107] "*The Fragments of the Works of Yaᶜqūb Ibn Ṭāriq*" 97.

first became known among the Arabs through the translations from the Greek; and some time must have passed before it "was becoming popular". By that time, however, the traditions had long become fixed in the body of critical Ḥadīṯ literature and wide-spread throughout the Muslim community. Moreover, it remains unexplained why in that period there was a need for such concoctions "to counteract the scientific geographical knowledge". If the latter was a threat then — whom did it threaten?

On the basis of his studies of the sources of al-Buḫārī, and through his discoveries of many hitherto unknown manuscripts, F. Sezgin can emphatically state that the basis for an historical evaluation of the traditions has profoundly changed since I. Goldziher's time.[104] Many early texts have been found that already contain the bulk of traditions collected in later books. As a result our knowledge extends far beyond the time when the translation activity began at the ᶜAbbāsid court. This is of crucial importance for our study of the earliest elements of cosmological thought in Islamic history: The traditions definitely lead beyond the period in which the natural sciences were supposed to have taken root.

Still, caution remains necessary: Not every individual tradition can be traced with certainty to the earliest available texts. Most of the *Isnāds* start with the highly respected Ibn ᶜAbbās who still knew the Prophet, though the text themselves vary considerably; hence it remains an open question whether the *Isnāds* really take us as far back as they claim. A later scholar — especially if he was a disciple of Ibn ᶜAbbās — may have ascribed his own views to this authority, either out of respect for his famous teacher, or to lend weight to his own views. His own student would be even more inclined to do so, particularly when he was only a freed slave of the great master Ibn ᶜAbbās. Thus it seems that the *Isnāds* take us safely up to the generation of Muǧāhid (this student of Ibn ᶜAbbās died in 722 A.D.). but not further. The earliest extant texts, too, are from this time, although MUǦĀHID's *Tafsīr* can probably not be reconstructed.[105]

The general conclusion from the traditional texts that finally ended up in AS-SUYŪṬĪ's *Al-hay'a as-sanīya* is inescapable: Cosmological thought must have been pursued by Muslim scholars as early as the second half of the seventh and the first half of the eighth centuries, that is,

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[104] Cf. GAS I, 53 ff. and F. SEZGIN: *Buḫārī'nin kaynakları hakkında araştırmalar;* Istanbul, 1956.

[105] See: G. STAUTH: *Die Überlieferung* And: H. HORST: *"Zur Überlieferung"*

limits of the present study — imposed especially by the edited text of AS-SUYŪṬĪ's *Kitāb al-hay'a as-sanīya* which does not reproduce the whole chain of transmittors — a detailed analysis of every individual *Isnād* is impossible. The question of historicity, therefore, can only be approached by means of general considerations.

As elsewhere, we will have to be satisfied to start with a "presumption of innocence": "Nemo gratis mendax" — there must be a reason for a falsification, when we justifiably suspect one; otherwise not only other people's sensitivities, but also the demands of justice and the rational procedures of the historian will be hurt. Such reasons most likely would be the party-spirit of the sects or doctrinal considerations. Apart from cases where cosmological theories could indirectly affect such doctrines as the pre-determination of human acts by God, His revelational contacts with man or His active influences on cosmic events, it is difficult to see how the above-mentioned reasons could interfere with the faithful transmission of such theories. Therefore it seems safe to argue that the cosmological traditions are in all likelihood authentic. Besides, they are often so strange, and resemble the cosmological views of other Near Eastern people to such an extent, that they cannot have been invented at a later date.

Since I. Goldziher's studies of Ḥadīṯ literature, in the course of which he disclosed that many traditions were fabricated precisely because of doctrinal or sectarian reasons, general suspicion has engulfed all traditions, regardless of the presence or absence of such reasons suggesting the likelihood of forgeries. Even when such reasons are given they are often too flimsy to support any judgment. Above all, the historian must watch his time-references. To say, for instance, that geographical traditions were "concocted in a later period to counteract the scientific geographical knowledge that was becoming popular among the Arabs of the period" is much too loose a formulation to have any historical value.[103] Presumably this "scientific geographical knowledge"

gesagt sein soll, dass Ḥadīṯe, deren Isnāde sich aus älterer Zeit herleiten, darum unzuverlässig wären." (H. HORST: *"Zur Überlieferung im Korankommentar aṭ-Ṭabarīs"* 306).

Cf. G. STAUTH: *Die Überlieferung des Korankommentars Muǧāhid B. Ǧabrs*. Zur Frage der Rekonstruktion der in den Sammelwerken des 3. Jahrhunderts d. H. benutzten frühislamischen Quellenwerke; Universität Giessen, 1969 (Diss.). Also: H. BIRKELAND: *"Old Muslim Opposition Against Interpretation of the Koran"*; in: Avh. U. a.d. N.V.-Akad. i Oslo, II. Hist.-Filos. Klasse. 1955. n. 1; Oslo, 1955.

Further: J. FÜCK: *"Die Rolle des Traditionalismus im Islam"*; in: ZDMG 93, N.F. 18 (1939) 1 — 32.

And: J. VAN ESS: *Zwischen Ḥadīṯ und Theologie;* Berlin — New York, 1975.

103 See: S. MAQBUL AHMAD, art. on Geography, in: *EI*[2] II, 576.

but the traditional words were preserved and faithfully handed down, as we can gather from the Ḥanbalī creeds of a later period.[101] Yet the difficulties were somewhat eased by emphasizing the immensity of God's throne, its light-nature and the many veils between God and His creation. And it was said that the throne was actually encompassing all that existed in the world. Thus Muslim theologians were forced to discuss cosmological questions from an early time on, and as-Suyūṭī became their heir.

III. The prehistory of the *Hay'a as-sunnīya* in the early Muslim community

As-Suyūṭī's remote sources

1. The question of historicity

Unlike Abū š-Šayḫ, from whose *Kitāb al-ʿaẓama* he draws most of his cosmological materials, as-Suyūṭī does not trouble to give the whole chain of transmittors for every statement he quotes. He immediately states the name of the earliest authority to which it was ascribed. Only when there is a variant in the text does he specify the link of the chain at which the tradition changed. This occurs, however, only rarely, and the impression arises that these teachings remained the same in the succession of the generations. Consequently, the text immediately leads to the oldest sources of cosmological thought in the early Muslim community. For, if the *Isnāds* on which as-Suyūṭī relies are indeed trustworthy, that is where its beginnings will have to be uncovered. The immediate sources from the ninth to the eleventh century merely collected and, for their own purposes, re-arranged the inherited fragments of cosmological models.

If the *Isnāds* are trustworthy — that is of course the serious condition. Full reliability probably can never be established, certainly not for all, because the historical evidence is not fully available.[102] And in the

[101] See: W.M.Watt: *The Formative Period of Islamic Thought* 293.

[102] See e.g. the conclusion of H. Horst's careful analysis of aṭ-Ṭabarī's traditions: "Da der reguläre Gebrauch von Isnāden frühestens im Anfang des 2. Jahrhunderts Allgemeingut war, sind Traditionen, deren älteste Gewährsmänner in dieser Zeit lebten, als zuverlässig zu betrachten, solange nicht eine Untersuchung des *matns* das Gegenteil beweist. Nach vorsichtigen Schätzungen gehen mindestens die Hälfte aller Isnāde in dem Korankommentar des aṭ-Ṭabarī bis in die erste Hälfte des 2. Jahrhunderts zurück, und es besteht kein Grund, die Glaubwürdigkeit dieses Teiles der Traditionen in Zweifel zu ziehen, womit nicht

models of the universe presented themselves. Since there is no reason to believe that the discussions about their reality were raised only at a late stage in the historical development of the Ǧahmīya sect, cosmology as a part of theological reflection must have begun well before the period of translations of foreign books, probably even before the execution of Ǧahm b. Ṣafwān in the year 129 H./746 A.D..

The position of the Ǧahmīya sect with regard to the reality of throne and footstool seems easy to grasp; for there is a certain consistency in their denial of the anthropomorphic (or perhaps one should say cosmological) view of God Almighty sitting on a throne. They were, it seems, primarily concerned with emphasizing the infinity, and therefore ubiquity, of the Eternal. Their opponents, on the other hand, may have been afraid that so much emphasis on God's infinity and ubiquity would turn into its opposite: What is unlimited, is in fact nothing. Only the air is unlimited and everywhere, while God — according to Sūra 6,19 — is the greatest of all beings, hence definitely a separate being. If He were in all things, there would be no real God because He would not be separate from His creation. Obviously, the scholars defending orthodoxy could conceive of such a separation only if God had His own definite place in the universe.

Furthermore, since God had described Himself as sitting on His throne when He revealed Himself, His own words would be robbed of their real meaning if He were not indeed separate from creation and sitting on His throne as a particular part of the universe. Ad-Dārimī quotes a pointed question put to a Ǧahmī:

> Bekennt ihr, dass Gott über dem siebenten Himmel einen wirklichen und bestimmbaren *(maʿlūm mauṣūf)* Thron hat, den die Engel tragen, und dass Gott oberhalb davon ist, so wie er sich selbst beschrieben hat, getrennt von seiner Schöpfung?[100]

The Ǧahmīya sect apparently tried to solve the problem with a rationalist interpretation of the Qur'ānic texts: "Throne" was understood to be representing the whole of creation, and the verb *istawā* = "to sit" was taken to mean the same as *istaulā* = "to dominate over". But their opponents rejected this interpretation which seemed to them to suppress the actual words. The clear Arabic words said it, therefore Allāh had to sit on His throne; and to stress the concreteness of the involved reality, it was added that a creaking sound like that of a new saddle could be heard. No one was able to explain how this would apply to the Almighty;

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[100] G. Vitestam: *K. ar-Radd* 27.

throne with ᶜAlī, the Prophet's son-in-law, it may be inferred that, with their rejection of the throne-ideology, the Ǧahmīya sect may have proclaimed their opposition to, either, the Manichaeans, who continued to be influential in early Islamic history, or to early representatives of Imāmite doctrines.[96] However that may be, the question whether God is actually sitting on a real throne must have stimulated theological thought about His presence in this world, through privileged leaders, or universally approachable, in addition to cosmological thought about the structure of the universe.

That the discussions about God's throne, which the Ǧahmīya sect either initiated or at least brought to the fore, were understood to have a significance for cosmology, is finally and decisively confirmed in AS-SUYŪṬĪ's *Al-hay'a as-sanīya.* In its first chapter, which explicitly deals with the place of God's throne and His footstool within the structure of the cosmos, he quotes two statements from AD-DĀRIMĪ's *Kitāb ar-Radd ᶜalā l-ǧahmīya,* to the effect that the throne is standing on the cosmic ocean, and that the rest of creation is arranged underneath. Again, when he describes the course of the Sun, the throne marks the point in front of which it comes to a halt to prostrate itself in an act of worship.

Also in other books on cosmology, cosmography, the wonders of creation etc., God's throne and His footstool feature as definite stages of the universe as a physical reality; their locations are given and often even their measures, although usually in somewhat fanciful proportions. When other cosmological models became available through the translations of Greek and Indian treatises, the tendency seems to have been to identify the throne with the ninth sphere, *al-falak al-aṭlas,* and the footstool with the eighth sphere, the sphere of the fixed stars. Already MUṬAHHAR B. ṬĀHIR AL-MAQDISĪ does this in his *Kitāb bad' al-ḫalq wa t-ta'rīḫ*[97], and so does the famous theologian ĪǦĪ in his *Mawāqif*[98]. But al-Qazwīnī seems unhappy with this attempt of harmonization between the Islamic authorities and the philosophers on the part of some Muslims.[99]

But the fact that this identification could be made at all and then become fairly widely accepted seems to indicate that throne and footstool were definitely conceived of as cosmological entities by the time other

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96 H. VON GLASENAPP: *Die Nichtchristlichen Religionen* 241. Al-Munāwī's saying is quoted in: I. GOLDZIHER: *Muhammedanische Studien* II, 288 f.

97 See: C. HUART: *Le Livre de la Création* I, 155 f.

98 *Mawāqif fī ᶜilm al-kalām* VII, 79.

99 AL-QAZWĪNĪ: *Kitab ᶜaǧā'ib al-maḫlūqāt* I, 54.

Ḥātim, too, who is quoted quite often in as-Suyūṭī's work, reportedly wrote such a refutation, later used by Ibn Taymīya;[91] but the title of that treatise is not mentioned in *Al-hay'a as-sanīya*.

Theology and cosmology cover much common ground when God's place in the universe, His actions affecting the various phenomena of nature and His relation to the world as a whole are discussed. In the Qur'ān, God is not yet set apart from this physical world, but is very much part of the whole universe, though ruling over it from His throne. On the other hand, He is closer to every human being than his jugular vein, He is All-knowing and Omnipresent — and yet different from any created being. Thus it is not surprising that the statements about the uppermost parts of the universe, God's throne and footstool, soon stirred up a lively debate among Muslim intellectuals.

It seems that the followers of Ǧahm b. Ṣafwān played a foremost role in this discussion. On the evidence of the treatises written against them, the question of the essence of God's throne, and whether He is actually sitting on it and thus located at this definite place in the universe, must have been the focal point of their investigation. Thus ad-Dārimī's first point of refutation is their denial of God's sitting on His throne; and — as the editor G. Vitestam[92] and the reviewer J. van Ess note[93] — he devotes extensive treatment to this point. It can be assumed to have had an essential function in Ǧahmīya thought, much more so than W.M. Watt, for instance, seems to believe.[94]

The origins of the Ǧahmīya sect have often been discussed, but have remained, nevertheless, rather obscure. However, the discussion whether God is sitting on His throne as a separate part of the cosmos, or not, can perhaps shed some light on the political and religious background of the Ǧahmīya sect. After ʿUbaydallāh b. Ziyād, the "leader who had the Kerbela massacre on his conscience", was killed by the army of Muḫtār, the latter celebrated the victory "in a strange ceremony before an empty throne revered as the seat of divinity".[95] — This ceremony appears less strange when we recall that every year on the feast of *Bema* the Manichaeans held a similar ceremony before an empty throne, the seat of their invisible founder. Reading further that al-Munāwī identified the

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91 See: Review of the above by J. VAN ESS, in: Oriens 13-14 (1960-61) 381.

92 G. VITESTAM: *K. ar-Radd* 25.

93 In: Oriens 13-14 (1960-61) 382.

94 W.M. WATT: *The Formative Period of Islamic Thought* 144.

95 C. BROCKELMANN: *History of the Islamic Peoples* 79.

II — *Differentiation of the winds*

Observation of nature resulted in ascribing the winds to definite directions of the world; they were determined in relation to the Kaᶜba.

III — *The effects*

1) The theological view is that winds are usually sent as instruments of punishment.

2) But they are also beneficial since they bring rain, and with it the seeds for vegetation. One wind, however, is sterile.

3) They are also beneficial by preventing putrefaction between heaven and earth.

5. AD-DĀRIMĪ's *Kitāb ar-Radd ᶜalā l-ǧahmīya*

The immediate literary sources of AS-SUYŪṬĪ's *Al-hay'a as-sanīya* examined up to now may have been unimpressive as scientific treatises, compared with other contemporary works of this kind, but they definitely dealt with that same subject. The numerous other sources from which as-Suyūṭī draws materials seem to have been different; for among them are Qur'ān commentaries and Ḥadīṯ collections and works that owe their composition to theological controversies. It is of course highly interesting to investigate how cosmology acquired such an important place in the first two of the above-mentioned categories, but the titles as-Suyūṭī mentions as his sources were composed in the ninth, tenth and eleventh century when their only function seems to have been the preservation of the early teachings. At this stage of our study they, therefore, do not require a detailed analysis.

Undoubtedly, Qur'ān commentaries and Ḥadīṯ collections show how much cosmological teachings had penetrated into the general framework of Islamic thought. But this intellectual development can be more easily understood on the basis of the third category of works, those originating from theological controversy. As-Suyūṭī quotes the *Kitāb ar-Radd ᶜalā l-ǧahmīya* by ABŪ SAᶜĪD ᶜUṮMĀN B. SAᶜĪD AD-DĀRIMĪ, who lived from 200 H./816 A.D. to 282 H./895 A.D.. This book has recently been edited and commented upon by Gösta Vitestam.[90] It is one of several such treatises against Ǧahm b. Ṣafwān, who was executed as a heretic as early as the year 129 H./746 A.D., or against his followers. Ibn Abī

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[90] G. VITESTAM: *Kitāb ar-Radd ᶜalā l-ǧahmīya des Abū Saᶜīd ᶜUṯmān b. Saᶜīd Ad-Dārimī;* Lund/Leiden, 1960.

blessings, there are others that link rain directly to vegetation and the growth of pearls. It is even related that some people proved, by special observations, that rain brings with it the seeds for vegetation.

B. THUNDER

I — *Its origin*

1) Again the main concern of Ibn Abī d-Dunyā seems to be the "Islamization" of nature: Thunder is either directly or indirectly produced by the Creator. Various traditions are quoted to prove that for the early Muslims thunder was God's speech, and thunderbolts His instruments of punishment. Or thunder was said to be an angel who praises God with a loud voice and drives the clouds.

2) A more inner-wordly explanation of thunderbolts links them to a sea of fire under the throne, which fire is the equivalent to the Greek ether.

II — *The effects*

Effects of thunder and thunderbolts are, according to IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar*, the praise of God, the movement of the clouds and destruction as a divine act of punishment.

C. LIGHTNING

I — *Its origin*

1) A theological explanation of lightning calls it the lances of the angel driving the clouds.

2) A more cosmological theory, derived from Abū l-Ǧald, describes lightning as the glitter of the celestial ocean, or as the clash of the angel with hail.

II — *The effect*

Lightning is related to the movement of the clouds.

D. WIND

I — *Its origin*

1) The winds, too, are said to be directly created by God: They belong to God's spirit. This assertion is stressed again by the repeated citation of Muḥammad's prayers against the damages of strong winds.

2) A more cosmological explanation treats them as almost personalized forces, at home in special regions of the univers.

A. RAIN

I — *Its origin.* From God, not from a *nau'*

1) The question of causation

The central goal of IBN ABĪ D-DUNYĀ's *Kitāb al-maṭar* may be described as "Islamization" of nature. Time and again the Creator is named as the cause of rain, and the pre-Islamic practice of the Arabs of causally linking the rains of the various seasons to the respective *anwā'*, the risings and settings of special constellations, is condemned as *kufr*, the unbelieving denial of God. The author does this either directly by citing explicit traditions[89], or indirectly by reproducing prayers, usually the Prophet's, for rain. Such prayers can only have the desired result if God is the direct, and personally approachable, cause of rain. Correspondingly a draught can be interpreted as a punishment for sins.

2) The cosmological framework

But Ibn Abī d-Dunyā also allows for cosmological explanations of the origins of rain. Thus he also quotes traditions that describe the rain as coming down from the throne, obviously thought of as a cosmic entity, and descending to the clouds; or as coming with the clouds from a tree in Paradise; or as originating in heaven as well as in the sea (thus reproducing Ḫālid b. Yazīd's theory). Indirectly, as can be seen, these texts cast light on the presupposed structure of the universe.

II — *Meteorological observations concerning rain*

More interesting than the causal explanations of rain are the numerous traditions quoted in the *Kitāb al-maṭar* that reflect the peculiar methods used by the early Muslims to observe and predict the developing weather conditions. They obviously paid close attention to characteristic formations and colours of the clouds, as well as to the direction and force of the winds. There also are indications that the amount of rain was officially recorded, apparently by the political administrators, probably to predict the harvests and consequently the likely income from taxes.

III — *The effects of rain*

A number of the traditions quoted by Ibn Abī d-Dunyā deal with the effects of rain. They are further testimony to the keen observation of nature in early Islamic times. In addition to the more theological statements that rain is a mercy of the Creator or the carrier of paradisic

[89] Fols. 57 v.; 61 v.; 62 r.

the formulas of prayer he used in such situations are recorded; the author may have considered them especially efficacious and wanted to make them available to the faithful. He may also have wished to emphasize that these phenomena depend solely on the action of the Creator, not on the *anwā'*, as the pagan Arabs had believed. But on the whole, edification can hardly be considered the real purpose of the book.

Nor is this simply a book of Arabic lexicography or literature, as other early texts with the same title usually are. A comparison with the *Kitāb al-maṭar* of Abū Zayd Saʿīd ibn Aus al-Anṣārī (119 H./737 A.D. — 215 H./830 A.D.), which was published in the beginning of this century by L. Cheikho,[88] shows the difference between Ibn Abī d-Dunyā's *Kitāb al-maṭar* and similar works of the lexicographers. Al-Anṣārī is obviously only concerned with the ascertainment of the correct names of the seasonal rains during the year, and their relation with the corresponding *anwā'*; and similarly with the names of thunder, lightning, the clouds, and watercourses. But he shows no interest in the natural phenomena as such, he does not inquire into their causes and natures. He quotes lines of poetry in several places as his sources, but no traditions at all. Thus he takes his materials from the old tribal poets of the Arabs, not from the religious authorities.

In contrast, all the information Ibn Abī d-Dunyā's *Kitāb al-maṭar* contains is conscientiously derived from the trusted transmittors of traditions or commentators of the Qur'ān; the reader is assured of this by a carefully transmitted *Isnād* for every statement. Moreover, these short texts never merely aim at giving the correct definitions of this or that sort of rain, thunder or watercourse, but at preserving the old theories of the religious authorities of early Islam concerning the origins, causes and effects of these phenomena. Often these theories may not sound very scientific, but they are elements of an early Muslim meteorology, specially sanctioned by the people to whom they are ascribed.

Since Ibn Abī d-Dunyā's *Kitāb al-maṭar* is very rare and has never been published, it will be useful to give a brief summary of its contents. It does not appear to be arranged in any systematic order, apart from the different chapter headings, referring to the various phenomena; and the individual statements are, in general, very concise fragments. The following summary, therefore, does not follow the sequence of pages, but surveys the contents under a few guiding ideas.

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[88] In: *Dix anciens traités* 99-120.

left aside the writings of the greatest contemporary authorities in meteorology. Al-Kindī, who died about twenty years before Ibn Abī d-Dunyā (i.e. ca. 260 H./873.4 A.D.), probably was tainted too much with Greek philosophy and science to be quoted. But it is more difficult to understand why the name of Ibn Qutayba (died 276 H./879 A.D.) is not found either. He composed a book on meteorology restricted to Arab lore and omitted anything that was connected with foreign philosophers and the mathematicians.[86] Nor do we find a reference to the numerous other books on the *anwā'*.

On the other hand, the biographical literature and the list of works he composed show that Ibn Abī d-Dunyā was only interested in the natural phenomena in so far as they had found their way into the religious traditions of the Muslim community. But this is precisely what lends originality to his work and interest for as-Suyūṭī and anyone searching for the earliest traces of a characteristically Muslim science: While scholars like al-Kindī acquired their meteorological knowledge through translations from foreign languages, and while the Arab lexicographers and historians collected the remnants of pre-Islamic lore and used the classification of the *anwā'* for the various meteorological and cosmological phenomena, Ibn Abī d-Dunyā preserved elements of such knowledge from the earliest Muslim generations. It may be argued that neither as-Suyūṭī nor anyone else would learn anything from Ibn Abī d-Dunyā about the science of meteorology as available in the second half of the ninth century; and about such elements that were already known to the pre-Islamic Arabs, and referred to by their poets, by far less than from the authors of the many *anwā'* books. But to which other book could he have turned for information specifically about the meteorology of the early Muslim community?

According to Brockelmann's classification[87], Ibn Abī d-Dunyā's goal as a writer was to entertain as well as to edify. Therefore he lists his works under the heading "Unterhaltungsliteratur in Prosa". But when one reads the *Kitāb al-maṭar* it is difficult to see how either of these two goals could adequately fit the peculiar character of this work. For it is neither entertaining nor, as a whole, edifying. Edification could be ascribed only to those traditions quoted in the book that preserve the Prophet's religious attitudes in times of draught, during terrifying windstorms, or when hearing thunder and being frightened by lightning. Even

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[86] IBN QUTAYBA: *Kitābu 'l-anwa'* 2.

[87] GAL I, 153.

omission of more theological matters has the effect of providing it with a more marked cosmological appearance.

Thus the study of his main sources reveals that as-Suyūṭī was not merely guided by his desire to preserve the traditional cosmological knowledge and to make it accessible to his own generation, as might be expected from an author so deeply committed to the Islamic heritage. But in his own way he applied the current notions about what constituted cosmology as a selective principle. This definitely seems to be a serious breach with his faithful and consistent adherence to the pure traditional sciences of Islam.

To take the traditional cosmological materials out of their framework of *tafakkur* and to discard it can only be conceived as a serious misuse of Abū š-Šayḫ's *Kitāb al-ᶜaẓama*. The result is that traditional cosmology is robbed of its inner vitality and readiness for ever more progress. It no longer is permeated by its religious spirit that urges the glorification of the Creator and thus attracts the faithful to earnest reflection on the phenomena of nature. Instead it was turned into a sterile cosmological system set up against others derived from different sources. Piety was degraded into apologetics.

4. Ibn abī d-Dunyā's *Kitāb al-Maṭar*

A considerable part of as-Suyūṭī's *Al-hay'a as-sanīya* is devoted to meteorological phenomena such as rain, clouds, thunder, lightning, etc. In this field, too, he draws on the familiar authors, especially Abū š-Šayḫ and Ibn Abī Ḥātim (died 327 H./938 A.D.). But he also turns to a book explicitly dealing with rain, namely the *Kitāb al-maṭar wa r-raᶜd wa l-barq wa r-rīḥ* by Ibn Abī d-Dunyā. As-Suyūṭī mentions this book only a few times; but in the study of his immediate sources it deserves special attention because it demonstrates how far back he reached to find the materials for his *Al-hay'a*, in what dissimilar pieces of literature he looked for them. According to Brockelmann[84], the author of this book lived from 208 H./823 A.D. to the year 281 H./894 A.D.. His treatise is very rare now. For the present study the manuscript copy in Köprülü Kütüphanesi was used which apparently was copied in the year 563 H./1168 A.H.; to my knowledge, it is the only copy still extant.[85]

It is noteworthy that as-Suyūṭī again placed his confidence in an author known to him as a reliable transmittor of traditions, and that he

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[84] GAL I, 153.

[85] Köprülü Kth. K. 388,3; fols. 49 v. — 74 r.

According to BROCKELMANN[81], there also was a *Kitāb al-ᶜaẓama* in the corpus of Ǧābir b. Ḥayyān's writings. But since no further information is available about this title, this may not have been a separate book. However, according to F. SEZGIN[82], there is another *Kitāb al-ᶜaẓama* extant in two manuscript collections; it is ascribed to a famous scholar who died only fourteen years earlier than Abū š-Šayḫ. His full name is Abū Ḥātim Muḥammad b. Ḥibbān b. Aḥmad b. Ḥibbān at-Tamīmī al-Ḥanẓalī al-Bustī. Unfortunately, it seems to be impossible to get access to the copy in Medina; and the copy that is said to be in the Ẓāhirīya Library, even according to the catalogue of that library, section Ḥadīṯ, p. 166, is actually a part of Abū š-Šayḫ's work. — But if this *Kitāb al-ᶜaẓama* is indeed different from Abū š-Šayḫ's book with the same title, it should be expecially interesting for the historian of Arabic science; for the Arabian biographers describe this author as a great scholar not only in Ḥadīṯ and Fiqh, but also in astronomy and medicine.

The tradition of works entitled *Kitāb al-ᶜaẓama* does not end in the tenth century: Princeton University Library has a manuscript with that title ascribed to Burhān ad-Dīn an-Nāǧī Abū Isḥāq Ibrāhīm b. Muḥammad b. Maḥmūd b. Badr b. ᶜĪsā al-Ḥalabī ad-Dimašqī.[83] This author actually died after as-Suyūṭī, namely in the year 956 H./1549 A.D.. His work seems to be nothing more than extracts from the earlier compilations of that title, especially that of Abū š-Šayḫ. For our study it is significant that even after as-Suyūṭī such a book could still bear the old title *Kitāb al-ᶜaẓama*. As-Suyūṭī must have had his reasons when he chose to call his own work *Al-hay'a as-sanīya*.

The question, then, arises in which way as-Suyūṭī used Abū š-Šayḫ's *Kitāb al-ᶜaẓama*, the chief source for the cosmological materials contained in his own compilation. When we look at the table of contents of the former, it is obvious that as-Suyūṭī has left aside all the chapters dealing with such theological questions as God's knowledge and actions in this world. He omitted further the parts describing the various angels and their characteristics, those discussing the figures of the *Qiṣaṣ al-anbiyā'*-literature, and especially also the introductory chapter on *tafakkur*. The latter omission is evidently the most significant because this, more than anything else, gives his own treatise its distinctive character, while the

81 GAL S I, 428.

82 GAS I, 189. However, according to RAAD 8/758, nr. 12, Raqm 57, it should be in the library Makt. al-Maḥmūdīya, not Makt. Šayḫ al-Islām.

83 Garrett Coll. 771.

with the historical development might be that the outlandish *Kitāb al-ʿaẓama* became so popular because it served the already existing and flourishing practice of *tafakkur*. Thus the caliph ʿUṯmān, though feeling no need to have God's existence proven rationally through the contingency or the beautiful design of creation, but eager to learn more about its wonders for the greater glorification of the Creator, may have welcomed a book that extended the natural basis of this *taʿẓīm Allāh* beyond the limits of his cosmological knowledge. Of course, all this does not make the introduction of the book any less apocryphal.

A *Kitāb al-ʿaẓama* that can be dated much more securely is listed among the works of the well-known Ṣūfī al-Muḥāsibī who died in 243 H./857 A.D.. JOSEF VAN ESS has used the fragment extant in the manuscript Cārullāh 1101 for his study *Die Gedankenwelt des Ḥāriṯ al-Muḥāsibī*[79] and translated a portion of it. This work, too, deals with the various phenomena of nature and stresses especially their divinely instituted order (*tadbīr*). It does so — if the extant fragment is truly representative of the whole work — under a theological aspect: The coordination and interdependence of the various created entities are cited as persuasive proofs of the Creator's unity. The world could never display this flawless harmony if it were the work of two or more creators. Thus this book is already one step removed from the searching quest of explanations, or the collection of such explanations in the manner of ABŪ Š-ŠAYḪ's *Kitāb al-ʿaẓama*. The testimony of nature observations is straightforwardly introduced into the theological controversy with Dualist tendencies. The book, therefore, belongs to theology, not cosmology, or any of the natural sciences.

Yet another *Kitāb al-ʿaẓama* is quoted by AN-NUWAYRĪ in his *An-nihāya al-arab* and ascribed to ABŪ ḤĀTIM AS-SIĞISTĀNĪ, who died in the year 255 H./869 A.D..[80] As far as one can tell from these few quotations, this *Kitāb al-ʿaẓama* seems to have had the same character as that of Abū š-Šayḫ, roughly one hundred years later. Thus it may be assumed that this book inspired him to compose his own. Since the author was primarily an authority on Arabic language and literature who had a strong interest in the remnants of ancient Arabian culture, his *Kitāb al-ʿaẓama* presumably was a collection of old Arabian cosmological theories. Thus he may have contributed to the materials contained in ABŪ Š-ŠAYḪ's book.

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79 See: above note 59.

80 Vol. I, 32 and 218.

is so obviously apocryphal that it should be rather difficult to prove that even in the tenth century anyone gave it credence. Nevertheless, a large number of manuscript copies of this treatise are extant, which shows how popular it must have been at its time. It acquired such a notoriety as a "mystical book" that even the modern bibliographers confused it with Abū š-Šayḫ's respectable *Kitāb al-ᶜaẓama.*[75]

As can be expected from the introduction, the book enumerates the various creations of God, one world after another. It does not fail to describe their immense measurements and the manifold individual features in these worlds. This variety and large numbers seem to have a special function in the various chapters that ᶜAbdallāh b. Salām sums up for the caliph ᶜUṯmān, who wished to learn more about the greatness of God's creation. The numbers are so fantastically big that at one point ᶜAbdallāh b. Salām has to put the caliph on guard against their mind-boggling effect. This may be a literary device to emphasize the overwhelming greatness of creation and its divine originator, leading to the practice of *taᶜẓīm*, the extreme exaltation of the Almighty. To say with Brockelmann that Ibn Abī d-Dunyā merely wants to entertain would hardly do justice to this piece of literature.[76]

It would be important for the history of cosmological interests among the early Muslims to know what the real historical roots of this book ascribed to Ibn Abī d-Dunyā were and whether it did exert an influence on Abū š-Šayḫ. But at present, we may only conjecture that it may have had some connection with the Jewish apocalyptic tradition.[77] On the other hand, the idea of new creations of immense measurements coming into existence one after the other strongly resembles the Babylonian tradition that a new world of a duration of 1000 to 3000 years appears at every degree along the Zodiac.[78]

But apart from the identical title there is no indication that Abū š-Šayḫ was indeed inspired by this other *Kitāb al-ᶜaẓama*. Thus we are not forced to abandon the view he seems to suggest in his own book that cosmological thought among the Muslims took its origin in the Qur'ānic practice of *tafakkur*. An alternative that is more likely to be in agreement

[75] Cf. above note 57.

[76] GAL I, 153.

[77] The fact that it is introduced as a book in the possession of ᶜAbdallāh b. Salām points into that direction, as well as the numerous parallels to the books of Enoch and the Midrash.

[78] See: D. Chwolson: *Über die Überreste der altbabylonischen Literatur in arabischen Übersetzungen* 477.

speculation on macro- and microcosm grew into a special genre of literature. By choosing the title for his book, Abū š-Šayḫ may have intended to make it part of this tradition of early Muslim cosmology. For there must have been some special significance in the fact that quite a number of books bear the title *Kitāb al-ᶜaẓama*. None of them is as yet accessible in a modern edition or translation. For some reason this genre of literature has failed to attract the attention of modern scholarship. This is amazing in view of the light it could shed on the early phase of the Muslims' intellectual interests in the realm of nature.

The oldest *Kitāb al-ᶜaẓama*, if indeed it is not merely a late fabrication, would be the one ascribed to Ibn Abī d-Dunyā. According to the introduction, the book claims to have belonged to ᶜAbdallāh b. Salām, an Arabian Jew who converted to Islam in the lifetime of the Prophet; it was read to the caliph ᶜUṯmān. The *Isnād* traces it back to Ḥasan al-Baṣrī, who is supposed to have heard it at the court of the caliph ᶜUṯmān and transmitted it to his students. But before this highly suspicious *Isnād* is mentioned, the book describes itself as "a book on the greatness of God Almighty, the properties of His creation in the heavens, on earth and under the ground, the angels and creatures (men?), paradise and hell."[74]

In order to strengthen its claim to comprehensive knowledge of creation, the book portrays itself as being identical with the *Kitāb al-ᶜaẓama* sent down to Adam, which was kept in a cover of white silk and contained the knowledge revealed to the Prophet. Adam, however, gave all creatures their names and is therefore in possession of all knowledge. He put down this knowledge on clay tablets, baked in fire, and deposited them in the safety of a cave. This cave was closed during the whole year, except on the day of *ᶜĀšūrā* when its entrance was open from the morning prayer up to the setting of the Sun. When the prophet Daniel heard of this cave, he came with forty of his disciples; and while the entrance remained open on the day of *ᶜĀšūrā*, they copied down as much as they could before sunset. Daniel, then, put everything down on copper sheets. At his death God granted the book to be brought out of the cave and made public to the world. One could hardly imagine a more complete collection of apocryphal features.

This fanciful introduction is followed by the *Isnād* and the story of ᶜAbdallāh b. Salām presenting the book to the caliph ᶜUṯmān, while Ḥasan al-Baṣrī apparently had the privilege of listening. The introduction

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[74] Quoted from the ms. Carullah 400, fol. 2 r.

In view of the rather disappointing example of Abū š-Šayḫ himself, the second point should be considered first. The term *tafakkur*, as described by him and more clearly by AL-ĠAZĀLĪ in the *Kitāb at-tafakkur*, is not restricted to the cosmological knowledge already established by the early Muslim authorities. Al-Ġazālī, for instance, extends the subject matter of *tafakkur* to many discoveries of the natural scientists, especially in the field of anatomy, which he could never have found in the traditions of the early Muslims. He explicitly distinguishes *tafakkur* from *taḏakkur* by describing its benefits as: "Increase of knowledge and adduction of wisdom that is not present" *(takṯīr al-ʿilm wa 'stiǧlāb maʿrifa laysat ḥāṣila)*.[70] To emphasize the progressive nature of this reflection on the manifold wonders of God's creation even more strongly, he insists that it is never-ending.[71] Hence *tafakkur* truly enables the Muslim scientist to advance to ever more discoveries.[72]

To turn to the first point: Abū š-Šayḫ himself adduces the most numerous testimonies for a fairly extensive use of *tafakkur* concerning the various phenomena of nature. Even if his *Isnāds* are not always trustworthy, there is ample evidence that the early Muslims must have often reflected on the wonders of creation, especially in the earliest Tafsīr works and such old books as *al-Ǧāḥiẓ*'s *Kitāb at-tarbīʿ wa t-tadwīr* or his *Kitāb al-ḥayawān*.[73] That explains best the presence of so many statements about the macro- and the microcosm that do not seem to fit into the religious, legal and political context of those early times. These people cannot have restricted themselves to the recitation of the Qur'ān, but must have freely used their minds.

In the course of the first three centuries of Islamic history the

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appreciation of al-Bīrūnī; "We see again and again in his study of mathematics, geography, or astronomy how the most technical mathematical discussion or rational discourse leads quite naturally to the affirmation of some attribute of the Creator. The emphasis on this noble aspect of reason as a natural bridge to the suprarational realities and to religious faith, rather than as an obstacle against them, is a profound aspect of the Islamic spirit. In this sense al-Bīrūnī can be considered among the most Muslim of those in Islamic civilization who devoted themselves to the study of the intellectual sciences and who synthesized the achievements of pre-Islamic cultures and developed them in the spirit of Islam."

70 *Iḥyā' ʿulūm ad-dīn* IV, 529.

71 Ibid., p. 556.

72 Cf. P. TEILHARD DE CHARDIN: *The Phenomenon of Man* 250: "... I would say to them that there is less difference than people think between research and adoration."

73 See C. PELLAT: *Le Kitāb at-Tarbīʿ wa-t-Tadwīr de Ǧāḥiẓ* - Cf. also the *Kitāb ad-dalā'il wa l-iʿtibār*; ed. by Muh. Rāġib aṭ-Ṭabbāḫ, Aleppo, 1346/1928; it is falsely ascribed to al-Ǧāḥiẓ, but quite old nevertheless.

become true that the more man learns about the external world, the more stars he sees and the better he becomes acquainted with the wonders of his own body, the greater will be the glory of the Creator. Though he constantly refers to God through all his discoveries, the sciences resulting from man's reflection on nature are not debased thereby. The practical uses of the sciences for astrological or technical purposes are much more likely to have such dangerous effects.

These considerations explain more easily why as-Suyūṭī would extract a book of cosmology from Abū š-Šayḫ's *Kitāb al-ʿaẓama*, which Ṣūfīs would use differently in their mystical meditations. And there can be little doubt, if any, that as-Suyūṭī's use of the book agreed better with the original intention of the tenth century compiler. For he would have hardly collected and authenticated his materials so carefully if he had not considered them seriously as elements of definite knowledge.

But it is a fact that Abū š-Šayḫ merely collected these cosmological fragments; none of them is the product of his own mind. As the member of a richly endowed community, he need not venture into the outside world for his observations; he is heir to a whole treasure of knowledge on which he can freely draw through the trusted guardians of the traditions. He need not search for inner peace since he did not lack it in the first place, but a greater awareness of the wonders of creation leads to a more enthusiastic acknowledgment of God's greatness. Thus he is not a mystic himself, but he can help those that are; he is not a scientist or philosopher himself, but gathers the cosmological teachings of the early Muslim authorities. In this he resembles the compiler of the *Placita Philosophorum* who collects the opinions of Greek philosophers, although Abū š-Šayḫ's intention was probably quite different. Thus he assembled that treasure on which as-Suyūṭī, some five centuries later, could draw for whatever he found useful in his time.

Though he played a rather restricted role as a mere transmittor of traditional cosmological knowledge, Abū š-Šayḫ's emphasis on *tafakkur* as applied to the phenomena of nature is important for two reasons: First, in retrospect, this term may be the key to a better understanding of the earliest speculations on natural questions in Islamic history, if indeed this practice was as old as Abū š-Šayḫ and his traditional authorities would have us believe. Secondly, the term suggests a promising avenue for a truly Islamic science which later generations of Muslim scholars may or may not have tried.[69]

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[69] Cf. S.H. Nasr: *An Introduction to Islamic Cosmological Doctrines;* especially his

natural knowledge, or whether it leads to a purely religious act of praise and exaltation. Abū š-Šayḫ quotes a tradition to the effect that "the world was not created so that one should look at it (*li nanẓura*), but it was created so that through it one should look at the other world."[66] The same point is stressed in later Ṣūfī treatises that may have taken their inspiration from books like this *Kitāb al-ʿaẓama*. Thus AL-ĠAZĀLĪ, in the *Kitāb at-tafakkur* of the *Iḥyā' ʿulūm ad-dīn*, explicitly distinguishes between reflection on matters connected with faith and on those connected with something other than faith. He states that he is only concerned with the former, although his objective basis for reflection in what follows is the anatomical intricacies of the human body and the diverse structures and phenomena of the cosmos.

The Ṣūfī treatise *Muṣībatnāme* by the great Persian mystic FARĪD AD-DĪN ʿAṬṬĀR, who wrote about three centuries after Abū š-Šayḫ, is a much stronger example of purely religious use of *tafakkur*.[67] In this work the "wanderer of thought" passes through almost the same stages as those in the traditions collected by the Ḥadīṯ scholar. But the attitude and the goal of the Ṣūfī author are strikingly different. In the *Muṣībatnāme* the journey through the whole of creation is undertaken out of bewilderment and inner restlessness, with the desire to find some guidance, and eventually deliverance, from inner torture.[68] The search is in vain from the outset; neither the angels, nor God's throne and footstool, nor heaven, Sun or Moon, nor the various beings and phenomena on earth, can fulfil the desires of the "wanderer of thought". He finally learns that he must turn inside, plunge into the ocean of his own soul. Thus he finds the ground of all being in himself. The structures and phenomena of the cosmos, therefore, do not hold true knowledge in store, but only delusion.

Although ABŪ Š-ŠAYḪ, in his *Kitāb al-ʿaẓama*, "wanders" through the same world, he is in an altogether different world. No delusion is lurking in the various branches of physical reality, but everything has meaning as a part of God's creation. Reflection on the natural phenomena need not pass them by hurriedly, but is privileged to store ever more true knowledge about them, notwithstanding that the Creator's face shines through everywhere. On the basis of this faith it will

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66 ABŪ Š-ŠAYḪ: *Kitāb al-ʿaẓama;* ms. Köprülü II, 138,2; fol. 5 v.

67 See: H. RITTER: *Das Meer der Seele* 18; 20 ff.; 77; 82; 330.

68 According to a private communication from Prof. A. Schimmel, this journey is an exteriorisation of the 40 days of retreat, and the 40 stages between man and God.

theories for him. This attitude strongly indicates that he wrote this book as a reaction against contemporary works that were indebted to Muᶜtazila or foreign influences.

In this context it should be noted how much prominence Abū š-Šayḫ gives to the mental action of *tafakkur*; he probably did so intentionally to advocate a return to this more purely religious practice and thus to avoid the abuses of *naẓar* which had become associated with that term through the Muᶜtazila tradition. In his view, *tafakkur* was probably more genuinely Qur'ānic, so much so that he could introduce his book with the *amr bi t-tafakkur fī āyāt Allāh*. This action was safeguarded from misuse by explicit traditions forbidding its application to God Himself.

In order to understand the aim of Abū š-Šayḫ's *Kitāb al-ᶜaẓama* and its peculiar approach to the natural phenomena it is crucial to have a clear idea of the role of *tafakkur*. It does not intend to establish a well-knit proof for the existence of God. That is not necessary because Abū š-Šayḫ presumes that his readers are firmly convinced of the dependence of this world on the Creator for its whole existence. In calling the phenomena of nature "signs" (*āyāt*), as does the Qur'ān, he is not speaking to atheists to convince them of the existence of a Creator; but he reminds the faithful that through these signs the Creator manifests His actions, His power, His wisdom and reveals an inkling of His greatness.

To regard the phenomena of nature as God's signs in this world gives them a singular value in man's pursuit of knowledge. Since reflection on God Himself and His essence is excluded, it is precisely through nature that man acquires deeper insights into the greatness of the Creator. Although the *Kitāb al-ᶜaẓama* differs markedly from Job of Edessa's *Book of Treasures*,[64] it shares with it the emphasis on the created beings as leading to the knowledge of the Creator. Thus Job of Edessa writes in the beginning of that work:

> ...and because it is by His works that God is known to be God, and the created beings are His works, it follows that the knowledge of the origin of the created beings is the knowledge of God... In the measure of our relation to it we shall become related to God.[65]

Although Job of Edessa's *Book of Treasures* is a well-known testimonial for the spread of natural philosophy among the Syrians, it may be questioned whether this intellectual act of reflection on the Creator's signs in nature can play a positive role in the acquisition of

[64] A. Mingana: *Encyclopaedia of philosophical and natural sciences as taught in Baghdad about A.D. 817, or: Book of Treasures*, by Job of Edessa.

[65] Ibid., 2 f.

The cosmos is the common denominator of this mass of seemingly incoherent materials. The numerous sections on such theological notions as the attributes of God and His actions in this world indicate what use the author wanted to make of these cosmological materials: All the variety, greatness and beauty of the cosmos manifest the oneness, the infinity and the wisdom of the Creator Who is active everywhere.[59]

But what need was there for such a book at the time it was compiled? For the contents of the *Kitāb al-ᶜaẓama*, when compared with earlier or contemporary ones, cannot have been considered novelties at all. The same natural phenomena are described, for instance, in MUṬAHHAR B. ṬĀHIR AL-MAQDISĪ's *Kitāb bad' al-ḫalq wa t-ta'rīḫ*, and before in his source, the Arabic translation of the *Placita Philosophorum*;[60] further in several books by AL-MASᶜŪDĪ (*Kitāb aḫbār az-zamān*, *Murūǧ aḏ-ḏahab*, and the *Kitāb at-tanbīh*).[61] However, there is a marked difference between these books and ABŪ Š-ŠAYḪ 's *Kitāb al-ᶜaẓama*, because he uses these materials for his own religious purposes and differs in the choice of, and the approach to, his sources.

As a traditionist, Abū š-Šayḫ derives all his information exclusively from authentic and authoritative Muslim sources. Not a single philosopher or foreign scientist appears to be mentioned in his lengthy book. And whereas al-Masᶜūdī selects traditional materials on the basis of the inner criterion of reasonableness,[62] Abū š-Šayḫ is committed only to faithful transmission of the early Muslim explanations of the natural phenomena, always relying on an unbroken *Isnād*.

This same attitude also determines his use of the statements he collects. He is satisfied to quote them as definite formulations of the truth, to be taken at face-value. Thus he is not concerned about apparent contradictions; and unlike his contemporary Muṭahhar b. Ṭāhir al-Maqdisī,[63] he does not find it necessary to suggest various rational interpretations of obscure theories. Obviously, they are more than just

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59 Cf. J. VAN ESS: *Die Gedankenwelt des Ḥāriṯ al-Muḥāsibī* 163 ff.

60 H. DAIBER: *Die arabische Übersetzung der Placita Philosophorum;* now published as *Aetius Arabus.*

61 AL-MASᶜŪDĪ: *K. aḫbār az-zamān;* Beirut, 1386/1966.

Id: *Murūǧ aḏ-ḏahab:* 4 vols., Cairo, 1948.

Id: *Kitāb at-tanbīh wa l-išrāf;* Leiden, 1894.

62 Consider e.g.: "Only, if a tradition is founded on such (historical) evidence, which leaves no doubt respecting its authority, one must subject (one's reason) to it, and be guided by it." (from A. SPRENGER: *El-Masᶜūdī's Historical Encyclopaedia, entitled "Meadows of Gold and Mines of Gems"* I, 295 ff.).

63 See: C. HUART: *Le Livre de la Création* II, 8.

VII. *(The wonders on earth):*

This table of contents and the many extracts from this book in AS-SUYŪṬĪ's *Al-hay'a as-sanīya* convincingly show that the author indeed intended to collect the cosmological teachings of the Muslim community.

Concerning Mīkā'īl	fo. 35 r
Description of Isrāfīl and what he is in charge of.	fol. 35 v
On the edifice in heaven, the creation of Ismāʿīl.	fol. 39 r
Description of the spirit.	fol. 39 r
Description of the angel of death, the greatness of his creation and his power.	fol. 40 v
Concerning the bearers of the throne and the greatness of their creation.	fol. 44 v
A report of Wahb.	fol. 45 v
Concerning the creation of Ǧibrīl, the trustful spirit.	fol. 46 v
Description of the heavens.	fol. 50 r

V. *(The cosmos)*:

Concerning the greatness of God, the wonders of His goodness, and His wisdom in regard to the Sun and the Moon.	fol. 55 v
Concerning the stars.	fol. 62 r
Concerning the clouds, their description.	fol. 63 v
Concerning the rain and its falling.	fol. 65 r
Description of thunder and lightning.	fol. 66 v
Concerning the Milky Way.	fol. 67 v
Concerning the winds.	fol. 68 r

VI. *(Land and sea)*:

Description of the beginning of creation.	fol. 72 r
Description of the earth and what is on it of God's creations.	fol. 74 r
Description of the sea, the fish, and the greatness of the creation of both; the wonders in both of them.	fol. 75 v

I. *The command concerning reflection on God's signs:*	
But no reflection on God Himself!	fol. 4 v
II. *Concerning one branch of reflection:*	
On God's greatness, His oneness, His wisdom, His planing and His rule.	fol. 7 r
On the intestines and the air between them, on the brain, the nerves, the skin of the head through which moves whatever nutrient, drink and food is in the (respective) channels, and in which there is the spirit, the soul, reason, understanding, friendliness, knowledge, stupidity, among other things.	fol. 7 r
On the uterus of woman in which is the flowing water and from which comes forth the complete human being.	fol. 7 v
What is mentioned concerning the merits of reflection on such matters.	fol. 8 v
III. *(Turning to God...)*	
Concerning God's knowledge.	fol. 9 v
Concerning the exaltation of God.	fol. 10 v
Concerning the signs of God.	fol. 11 v
Concerning the position of God, His command and its execution.	fol. 14 r
Concerning one kind of forgiveness on the part of God Most High.	fol. 18 v
Concerning God's throne, His footstool, and the greatness of His creation.	fol. 19. v
IV. *(Between God and the world...):*	
Concerning the veils of God.	fol. 26 v
Concerning the creation of the angels, their multitude and number.	fol. 30 v
Concerning the angels in charge of the heavens and the earths.	fol. 32 v

faithfully by the norms of trustworthy Ḥadīṯ collectors and transmittors. Every statement of a doctrinal nature is supported by the whole chain of its transmittors, without regard for the eventual size of the book. Doubtless, he was concerned with presenting to his readers only knowledge that was verified by reliable early Muslim sources. This concern may indicate that his compilation was a reaction against other books on the same or similar subjects, but less carefully authenticated or used for different purposes (such as e.g. AL-MUṬAHHAR B. ṬĀHIR AL-MAQDISĪ's *Kitāb bad' al-ḫalq wa t-ta'rīḫ*, which was probably written just before the *Kitāb al-ᶜaẓama*). It could also be that the author was thinking of a treatise of the same title which is ascribed to Ibn Abī d-Dunyā and which in F. SEZGIN's *Geschichte des Arabischen Schrifttums* is confused with Abū š-Šayḫ's own work.[57]

The most characteristic feature of ABŪ Š-ŠAYḪ's *Kitāb al-ᶜaẓama* is, however, its pietistic religious spirit. In the catalogue of Köprülü Library in Istanbul it is listed as a "mystical book", and F. Sezgin uses the same adjective in his description of the work. A thorough study of the book might put it into a different category; yet that classification is not merely due to an accidental oversight or a mistake of the cataloguer. In my view the work lacks the peculiar features of a Ṣūfī treatise, but it is undoubtedly imbibed with a spirit of profound piety. That it is not listed as a Ḥadīṯ work, nor as a collection of cosmological teachings, is probably due to the fact that later Ṣūfī authors - e.g. AL-ĠAZĀLĪ in the book of *At-tafakkur*[58] in the *Iḥyā' ᶜulūm ad-dīn*, and FARĪD AD-DĪN ᶜAṬṬĀR in the *Muṣībatnāme* — use similar or the same materials as Abū š-Šayḫ. In any case, the peculiar amalgam of the natural phenomena as subject matter, the strictly traditional form, and the pious spirit give the *Kitāb al-ᶜaẓama* a remarkable originality. As such it may be unique in Arabic literature.

To give the reader a general idea of ABŪ Š-ŠAYḪ's *Kitāb al-ᶜaẓama*, and of the way as-Suyūṭī used it for his own treatise, it will be useful to include a detailed outline of its contents:

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[57] See: I, 201. My conclusion is based on a comparison of the two manuscripts Carullah 400 and Köprülü II, 138,2, both in Istanbul.

[58] It is difficult to give a definite translation of the term *tafakkur;* see Bousquet's explanation; "Le mot *tafakkour* peut avoir le sens général de: 'pensée', ou: 'réflexion' et, à l'occasion, c'est ce qui a lieu dans ce livre, En général, cependant, l'auteur désigne par là, la méditation religieuse. Le mot *fikr* est employé par lui comme synonyme; cependant, en général il a ici le sens de 'pensée' dans l'acception large du terme" (G.-H. BOUSQUET: *Ghazâli. Ih'ya ᶜouloûm ed-Dîn ou Vivification des Sciences de la Foi* 425, n. 1.
Cf. H. RITTER: *Das Meer der Seele* 18 f.,

we said already in the beginning of this section, the question about the immediate origin of his materials can be readily answered. We now turn our attention to these immediate sources, after the two treatises discussed above have given us a fairly clear answer to the formal question why the composition of a *Hay'a* of such a peculiar *sunnī* character may have been considered necessary or desirable.

These materials are by no means rare in Arabic literature. They occur in numerous books on cosmology, meteorology, wonders of creation, history, literature and style, theology, mysticism, tradition, qur'ānic commentaries, etc., right up to the time of as-Suyūṭī. He might easily have increased the number of quoted authors, and even from those he quoted he might have extracted even more materials. As he felt bound by the traditional attitude to science, as discussed in the preceding examples, his originality as a compiler rests in his choice of authors and passages.

A tenth century author whom AS-SUYŪṬĪ quotes so often that his *Hay'a as-sanīya* owes almost every fragment to him is a scholar with the name Abū š-Šayḫ. He is still largely unknown to modern scholarship. None of his various extant works on Ḥadīṯ, Tafsīr and History has been edited or studied. It is somewhat surprising that his works have been neglected thus far because he gained quite a reputation as a famous and reliable scholar in Ḥadīṯ and Tafsīr. But the Arabic biographical literature contains some information about his life, his personality and his works.

The full name of this man known as Abū š-Šayḫ was Abū Muḥammad ᶜAbdallāh b. Muḥammad b. Ǧaᶜfar b. Ḥayyān al-Anṣārī al-Iṣfahānī. He was born in 274 H./887 A.D. and died in 369 H./979 A.D.. According to his student ABŪ NUᶜAYM's *Kitāb ḏikr aḫbār Iṣbahān*, Abū š-Šayḫ was a *Ṣāḥib* Abī Dā'ūd, which must mean that he attached himself faithfully to that authoritative collector of *aḥadīṯ*. Shedding some light on his character, ḎAHABĪ says of him in his *taḏkirat al-ḥuffāẓ* that he was so pious that his students usually would find him engaged in prayer, in contrast to his contemporary aṭ-Ṭabarānī whom they always found merry and laughing.[56]

All these features of ABŪ Š-ŠAYḪ's character and work are reflected in his *Kitāb al-ᶜaẓama*, the book that became the chief source for AS-SUYŪṬĪ's *Al-hay'a as-sanīya*. This book obviously endeavours to abide

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[56] ABŪ NUᶜAYM: *Kitāb ḏikr aḫbār Iṣbahān* II, 90; *Aḏ-Ḏahabī: Taḏkirat al-Ḥuffāẓ* III, 147, n. 48; 1377/1958: p. 945, n. 896.

which Gundēšāpūr was one, may have propagated the teachings of the Skeptics.[52] If this suggestion agrees with the historical facts, "scientific medicine" did hardly offer enough intellectual assurance to many people; so they sought it in the prophetic teachings.

Such a conclusion is, for instance, suggested by the disputation between Abū Ḥātim ar-Rāzī and the famous doctor ar-Rāzī. As was the method of the philosophical school of the Skeptics, Abū Ḥātim ar-Rāzī emphasizes the numerous variances of opinion among the ancients and those who continue their tradition of learning. In his view, this variance in itself is an evil, and it leads to ever greater variance, which equals ever greater error and blindness. At the basis is the notion that the ancient sages were the accomplished scholars who had attained to the truth of all matters; their followers, therefore, could only be imperfect imitators of their learning. That one can be on the way to the truth through independent efforts, as the doctor ar-Rāzī suggests, means nothing for him.[53] Hence only the apparent uniformity of prophetic knowledge offers certainty. And who would forgo that in matters of life and death?

Finally it should be noted that the mere existence of a *Ṭibb an-nabawī*-literature, side by side with "scientific medicine", does not constitute a danger for the latter, as seems to be implied in C. Bürgel's article. On the contrary, seeing that the most original scholars still when the hey-day of Arabic science was coming to its end — such as Ibn an-Nafīs[54] or Quṭb ad-Dīn aš-Šīrāzī[55] — also wrote on the traditional sciences of Islam, one might legitimately argue that the availability of varying ideas and methods is of greater value than the uniformity of one particular school-tradition. For the same reason treatises putting forth the *hay'a as-sunnīya* should not rashly be regarded as threats to "scientific cosmology".

3. Abū š-Šayḫ's *Kitāb al-ʿaẓama*

As-Suyūṭī's addition to the numerous works on the science of the cosmos available to contemporary readers is a compilation of quotations extracted from authors of the ninth, tenth and eleventh century. Thus, as

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52 J. van Ess: *Die Erkenntnislehre* 233.

53 P. Kraus: *Abī Bakr Mohammadi Filii Zachariae Rachensis (Razis) Opera Philosophica Fragmentaque quae supersunt* 1, 300 ff.

54 Cf. M. Meyerhof & J. Schacht: *The Theologus Autodidactus of Ibn Al-Nafīs* esp. the works, p. 28 and p. 58, + note 1.

55 See: S.H. Nasr: *Quṭb Al-Dīn Al-Shīrāzī;* in: DSB, esp. the works on pp. 248 f.

der Blüte Jahrhunderte der Stagnation und schliesslich ein Grad an Verfall, wie er tragischer nicht gedacht werden kann.[50]

This judgment by an expert on the subject may sound convincing; but when it is examined in the light of Ibn as-Sunnī's treatise, the only one to be considered in the context of the present study, it raises more problems than it solves. There is first the time-factor: Ibn as-Sunnī must have written his treatise before 364 H./974 A.D., the year he died. Since he uses much older materials it is impossible to deny that the *Ṭibb an-nabawī* is at least as old as the so-called "scientific medicine", and probably predates it. Therefore, it did not prevent the introduction of "scientific medicine", nor did it stifle its progress in the tenth century, when Ibn as-Sunnī composed his treatise; and it is all the more doubtful that it became the cause of stagnation in later centuries.

Secondly, there is the question of the terms: "Scientific medicine" can be opposed glibly to "Prophetic medicine" only because it is defined purely on objective and exterior grounds, i.e. the translations from the Greek that were used, not how they were used. Indeed, with the additions in the second part of his conclusion quoted above C. Bürgel himself raises doubts as to why he speaks of a "scientific medicine" at all. On the other hand, he blames "Prophetic medicine" for all superstitious and magical practices that occurred in the course of the centuries, while authors like Ibn as-Sunnī are greatly concerned to authenticate every statement they accept. Of course, their final authority is prophetic knowledge, not great teachers like Galenos or Hippocrates.

One also looks in vain for a satisfactory explanation of the fact that books on the *Ṭibb an-nabawī* were, and continued to be, written while "scientific medicine" supposedly was flourishing. After all, unlike other sciences medicine can easily demonstrate its superiority and its scientific value in the daily life of the community. But perhaps this community — though much in need of it — could not afford it, or "scientific medicine" failed its experiential tests, especially the ultimate one, all too often. In the face of death no one cares much about scientific claims.

Perhaps the early Arab doctors themselves did not care too much about such scientific claims. It may amuse us; but the early *Mutakallimūn* considered their own science superior to that of the physicians, whom they believed to rely too much on tradition and practice to be true men of science.[51] And J. van Ess suggests that the old medical schools, of

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[50] C. Bürgel: *"Die wissenschaftliche Medizin im Kräftefeld der islamischen Kultur"* 16.

[51] Cf. G. van Vloten: *Ein arabischer Naturphilosoph im 9. Jahrhundert (el-Dschāhiz)* 16 f.

2. IBN AS-SUNNĪ's *Aṭ-Ṭibb an-nabawī*

For further confirmation of Abū Hurayra's statement on the disappearance of disease at the rising of the asterism (i.e. the Pleiades), as-Suyūṭī turns to a medical treatise: The *Ṭibb an-nabawī* of IBN AS-SUNNĪ. Like most of the other authors whom as-Suyūṭī quotes as his literary predecessors, Ibn as-Sunnī belongs to the tenth century (d. 364 H./974 A.D.). He is thus probably the earliest representative of the "Prophetic Medicine", that branch of Arabic medical writings which relies for all its information on the traditional reports from the Prophet. It is not surprising to find it mentioned; as seen above, as-Suyūṭī felt more competent in medicine than in any other of the natural sciences, and he himself compiled a fairly long treatise on the Prophetic Medicine.

I could consult a manuscript copy of IBN AS-SUNNĪ's *Aṭ-ṭibb an-nabawī* in Süleymaniye Kütüphanesi, belonging to the Fatih collection (nr. 3585). It has 72 folios, and was copied in the year 775 H. To my knowledge this is the only copy of the text still extant. Ömer Recep has studied this work for his Marburg thesis (1969), together with ABŪ NUᶜAYM's *Prophetic Medicine*.

In the case of Ibn as-Sunnī's treatise it is even more obvious than in that of al-Baġdādī's that it must have influenced as-Suyūṭī primarily through its attitude to science. This attitude is the same as that of the *Risāla fī ᶜilm an-nuǧūm*: The certainty of real science can only be obtained on the basis of the Prophet's inspired knowledge and that of his faithful.

Modern scholars who have written on Prophetic Medicine in general have tended to see in it a dangerous threat to the success of scientific medicine among the Muslims. Their conclusions require some consideration not only because as-Suyūṭī, in quoting Ibn as-Sunnī's treatise, acknowledges some indebtedness to the *Ṭibb an-nabawī*, but also because that peculiar approach to medicine may have exerted a similar influence in the development of the sciences among the Muslims as the *hay'a as-sunnīya*. Thus C. Bürgel observes pointedly:

> Es war mithin der Geist der Prophetenmedizin, der der wissenschaftlichen Medizin allmählich den Boden entzog, freilich nicht ohne deren Schuld: denn eine Wissenschaft, die nicht nur, von Ausnahmen abgesehen, darauf verzichtet, sich durch Forschung frisches Blut in die Adern zu pumpen, sondern sich obendrein, weithin aus Bequemlichkeit, einem geistigen Schrumpfungsprozess überlässt, ist zum Niedergang verurteilt. So folgten auf glanzvolle Jahrhunderte

against another, of certainty against assumptions, not tradition against science.

That it is fundamental skeptical distrust in the powers of human reason which motivated these Muslim scholars of the tenth to the eleventh century to abandon the science of the stars derived from foreign sources and to develop their own, authenticated by the Islamic authorities, appears also from AL-MAQDISĪ's *Kitāb bad' al-ḫalq wa t-ta'rīḫ* (= Le Livre de la Création et de l'Histoire). It is roughly contemporary with ABŪ Š-ŠAYḪ's *Kitāb al-ᶜaẓama,* but written in a different spirit. It makes extensive use of borrowings from Greek philosophical writings and arguments inherited from the *Mutakallimūn.* Nevertheless, its reaction against the tradition of the astronomers (in most cases this term will be more accurate than to speak of scientific astronomy) is quite similar to the works of the experts of Islamic tradition mentioned above; as for instance in the following passage:

> Les traditions musulmanes disent que d'un ciel à l'autre il y a la distance de cinq cents ans de marche, et que chaque ciel est également de la grandeur de cinq cents ans de marche. Les anciens ont émis une appréciation à ce sujet: El-Fézârî a prétendu qu'il y a, entre chaque ciel, la distance de trois mille ans de marche. L'Almageste mentionne les quantités afférentes aux corps des étoiles, à leurs distances du point central de la terre, à leur distance l'une de l'autre dans les espaces supérieurs, la mesure de l'axe de chaque ciel, sur lequel il tourne, la grandeur et l'amplitute des sphères, la situation de la terre et ses mesures en longueur, largeur et circonférence, quantités dont Dieu seul a la vraie appréciation! Si ces mesures sont exactes, ce ne peut être qu'en vertu d'une révélation, car les forces humaines sont impuissantes à produire de pareils calculs; et si elles sont obtenues par conjecture et estimation, la tradition des Musulmans est en ce cas plus vraie et mérite mieux la confiance; et si elle est vraie, elle peut s'interpréter de deux manières: la première est l'éloignement en distance, la seconde, l'impuissance où est l'homme de s'élever à cette hauteur.[49]

Thus al-Maqdisī, too, gives preference to the cosmological teachings of the traditional authorities of Islam. But with this important difference: He also expounds the teachings of the scientists and philosophers, considers them, and tries to find a rational explanation for the former. From such a position there obviously would be no point in compiling a *Hay'a as-sanīya fī l-hay'a as-sunnīya.*

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[49] Muṭahhar b. Ṭāhir AL-MAQDISĪ: *Kitāb al-bad' wa t-ta'rīḫ*; ed. and transl. by C. Huart as *Le Livre de la Création et de l'Histoire; here: II, 8.*

authentic teachings of the Prophet and his followers who interpreted them.

As noted above, in the beginning of his treatise al-Baġdādī merely says that much (*kaṯīr*), but not all, of the science of the stars is contained in the authoritative sources of Islam. But a careful examination of the whole *Risāla* shows that he must have meant his statement in an exclusive sense. And a distinction between astronomy and judiciary astrology is of no avail, because none of them is recognized as a true, independent science. The only feature of such a science that is conceded as permanent seems to be the nomenclature of the stars. Not even their usefulness for the orientation of travellers on sea and land, so often quoted from the Qur'ān, can truly serve as basis for the development of such a science. For, as we learn from the story of David and the prophet Yōshuᶜa b. Nūn, the Almighty can change the course of the celestial bodies at any moment and thus confuse man's computations.

It must, therefore, be concluded that in al-Baġdādī's view the Qur'ān does not encourage man to develop those sciences on his own to which it seems to refer; through its revelations, and the interpretations of the faithful, it offers all the valid knowledge that can be attained. Some 400 years later, as-Suyūṭī came to the same conclusion, and al-Baġdādī's treatise probably was his chief inspiration for compiling a book on the cosmos that would faithfully reflect the attitudes of that trusted authority on Islamic teachings from Baġdād. He went beyond his predecessor, for he did not just quote a few examples in support of a theological verdict on what was permissible or even laudable with regard to the science of the stars; he collected a considerable amount of trustworthy materials from the books of tradition, drawing especially on ABŪ Š-ŠAYḪ'S *Kitāb al-ᶜaẓama* (= *The Book of Highness*), a real mine of the traditional Islamic teachings on the cosmos (more of it later). Whether he considered his *Al-hay'a as-sanīya* a *summa* of all the available knowledge of that kind remains an open question.

Al-Baġdādī's treatise on the science of the stars not only explains the peculiar character of AS-SUYŪṬĪ's *Al-hay'a as-sanīya,* it also removes from him the charge of being the initiator of a reactionist revolt against the progress of the science of the stars. The rift between the science of the stars based on foreign sources and the traditional Islamic teachings had occurred already in the first half of the eleventh century, and probably earlier, if that anonymous refutation of that science discussed above is indeed as old as it appears. It probably is the reaction of one tradition

However, not only astrology as we know it is thus robbed of its scientific claims, its astronomical foundations are not respected either. As he has dwelt with much delight on the errors of the individual astrologer, so the attacker finally turns to the numerous differences between the Egyptian, Babylonian and Greek astronomers (of the latter he just mentions Ptolemy).

They have divided the Zodiac into portions of varying sizes, which has grave consequences for all statements based on the influences of the stars. For they are modified by the positions of the stars in relation to each other and to specific areas in the sky. The astronomers are all aware of their differences, but each relies on one *Zīğ* as if it were the only one in existence. The *Zīğāt* mentioned are: PTOLEMY's *Zīğ*, the *Sindhind* and the *Mumtahan*. This multiplicity in itself convinces our critic that the science of the stars does not yield any certain and generally valid knowledge, consequently none at all. It is as if he simply applied the *tropoi* of the ancient Skeptics: Multiplicity reveals the impossibility of true knowledge.[47]

Even the various cosmological theories of the astronomers — as to form and movements of the celestial sphere, the appearances, forms and movements of the stars, either by themselves or as carried around by their spheres, or whether these spheres are complete spheres or only rings — make it impossible for the critic to accept the science of the stars as a valid one. The author's final conclusion even denies that this science can make use of decisive proofs; its only basis, he believes, are the traditions of the ancients:

> In what they differ there is no evidence for anything, except the teachings of their predecessors; and thus also in what they draw up in their books, their claims and their pretensions. So they make endeavours without a decisive proof and without a stringent argument. As a result, they are flooded with difficulties and vacillating in confusion.[48]

Obviously this state of affairs excludes any science of the stars deserving that name. Since al-Bağdādī agrees with the above-quoted critic to the point of adopting his arguments, he regards as a true science of the stars only one that is based entirely on the revelations of the Qur'ān, or the

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[47] Cf. H.J. STÖRIG: *Kleine Weltgeschichte der Philosophie* 173 f. Also: W. WINDELBAND: *History of Ancient Philosophy* 335 ff.

[48] AL-ḪAṬĪB: *Risāla* fol. 19 r.

> Am Hofe des Ma'mūn hat ein Angehöriger der Ḥisbānīya verkehrt, d.i. jener Leute, die da glaubten, daß "alle Dinge (nur) Phantasie (*tawahhum*) und Mutmaßung seien, daß die Menschen sie nur nach Maßgabe ihres Verstandes erfassen und daß der Wirklicheit keine Wahrheit zukomme" (*lā ḥaqqa fī l-ḥaqīqa*?; vgl. Ibn ʿAbdrabbih. ʿIqd II 407, pu. ff.). *Ḥisbān* begegnet dann auch sonst gerade in den frühen Quellen als Kennwort für die Sophisten...[45]

Our text does not indicate clearly and definitely that the opponent of the astrologer under attack belonged to a specific school such as the Ḥisbānīya apparently was. But the connection of *ḥusbān* with *ẓann* may show the underlying philosophy to have been the same as the characteristic doctrine of that school that gave it its name. The gist of the attack seems to be that, with his methods, the astrologer can only make guesses, purely mental assumptions,which inspite of his intellectual efforts never contain any reality.

Our text seems to give us a further clue for the identification of the underlying philosophy. Since the scholar under attack is an astrologer, it is not surprising to see him accused of being a liar who claims to have the knowledge of the hidden (*al-ġayb*). But this is coupled with a strange comparison between him and "the man of the even and the odd" (*ṣāḥib az-zauǧ wa l-fard*). Probably this characterization does not allude to the author of a book with that title, but to the philosopher Pythagoras, or one of his disciples, who is clearly identified by the doctrine of "the even and the odd". For historical reasons it would be noteworthy to find, already in this early Arabic text, the science of the stars associated with the Pythagorean school and on that ground declared to be divorced from reality. It is not altogether surprising because al-Ǧāḥiẓ, too, criticized al-Fazārī, probably referring to the early Arabic astronomer, for holding a Pythagorean view, namely that the spirit is something spherical.[46] However, "the even and the odd" may simply be an allusion to a game like the *Artiasmos* in Greek or the *Par impar* in Roman culture, or to a method of prognostication.

The text goes on ridiculing the scientific claims of the astrologer. With all his calculations, it is asserted, he is not above the ordinary soothsayers who hit the mark at least as often as he does. All his basic principles, the division of the Zodiac, the order of succession of the signs, the mansions and their coordination with the individual planets, etc., all this is not based on sound reason, but on arbitrary conventions.

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[45] J. VAN ESS: *Die Erkenntnislehre* 232.

[46] See: M. ADAD: *Le Kitāb al-tarbīʿ wa al-tadwīr d'al-Ǧāḥiẓ* 79.

tation by analogy (*qiyās*), as relied upon by his opponent, is bad, and his reflection (*naẓar*) is sick. In consequence he only attains to uncertain opinion (*ẓann*) and conjecture (*ḥusbān*). As his many errors manifest, the science of the stars does not yield any certainty.

The most interesting and perhaps also most characteristic element in this attack is to see *ḥusbān* — usually translated as "calculation" — being put on the same level with *ẓann*, which is never more than just "uncertain opinion". If both are treated as synonyma, the implication must be that both are affected by the same radical uncertainty.

When the Qur'ān uses the term *ẓann*, it is opposed to the real possession of knowledge: Only the people grounded in revealed knowledge through faith have certainty; the others merely follow their uncertain opinions.[44] — The use of *ḥusbān* in a refutation of the science of the stars is not unusual. According to DOZY's *Supplément aux Dictionnaires Arabes*, *ḥisāb* in astrology specifically denotes the action of calculating one's destiny. But if it is purposely connected with *ẓann* in the Qur'ānic sense of the word, then the trustworthiness of this science is rejected right from the outset, and there appears to be room only for a *hay'a* of as-Suyūṭī's type.

However, we cannot be sure that Qur'ānic terminology has been intentionally employed in this case. It may not even refer to an inner-Islamic discussion and the terminology could be pre-Qur'ānic. The whole text is reported from a certain Faḍl b. Marwān (most probably the vizier of that name, cf. *EI*[2] II, 730), who in his turn introduces it as formulated by one of the old scholars (*baʿḍ ʿulamā' as-salaf*), which may or may not refer to antiquity. But the other terms in this context point to the conceptual framework of Islamic theologians. Thus the term *tabḫīt*, which in the context of the prayer ritual means taking one's chance with regard to the *Qibla*, the proper direction when bowing down in worship, is used as synonymous with *ḥads*, the action of merely guessing.

The term *ḥusbān* as synonymous with *ẓann* may well point to an even earlier time and a rather different system of thought. In his comprehensive study of the thought of *kalām*, *Die Erkenntnislehre des ʿAḍudaddīn al-Īcī*, JOSEF VAN ESS translates the term *ḥusbān*, or rather *ḥisbān*, by "*Mutmaßung*" and states that this term reaches down to the oldest layer of tradition, supposedly the tradition of the discussion on the reliability of human knowledge:

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[44] Sūra 10, 36. 66. — Cf. J. VAN ESS: *Die Erkenntnislehre des ʿAḍudaddīn al-Īcī* 13.

consternation he realized that only his own men were killed, because his cunning unbelieving opponents sent only those warriors into battle whose lifespan they knew not yet to be ended. When David remonstrated with God, for whose cause he was convinced to be fighting, the secret of his enemies was revealed to him.

To make up for it, God then agreed to let the Sun stand still, so that the time of day was extended, the night shortened, and the reckoning of the astrologers totally confused. As a result, ʿAlī is supposed to have added to the story, he (David? or ʿAlī?) no longer had any respect for the consideration of the stars *(an-naẓar fī an-nuǧūm)*.[42]

This tradition, obviously, was suspect: Abū Hurayra, it is reported, had heard from the Prophet that the Sun was made to stand still only for Yōshuʿa b. Nūn, not for David. But the negative turn against astrology at the end of the story apparently changed it, nevertheless, into a welcome weapon. For, in this context, it simply illustrates that there is no certainty in the computations of the astrologers and that their science, consequently, is useless. A poem by Abū Tammām aṭ-Ṭāʾī, which glorifies a hero who went out on a campaign inspite of the warnings of astrologers that he would not return, but who instead achieved a brilliant success, serves the same purpose.[43] In both cases the argument hinges on an absolutist view of knowledge: Unless it yields predictions of 100% certainty, the science of the stars is altogether useless. Since an error of computation may always occur, a true science can only be one that is solidly based on revelation and the authentic traditions and decisions of the community. If even computations cannot always be trusted, the sole guarantor of true knowledge can only be the shared faith within that community. Exceptions, then, can only be miracles, new acts of the Creator; and they, from the outset, are encompassed by this faith.

Towards the end of his treatise al-Baġdādī cites a fairly long refutation of the science of the stars by an anonymous scholar. It emphasizes the uncertainty of all its conclusions, not only its predictions of future events. Although he does not explicitly say so, al-Baġdādī can be assumed to be in full agreement with that author. Through this old text, therefore, he further prepared the ground for AS-SUYŪṬĪ's *Al-hay'a as-sanīya*.

The quote begins with a general attack on the methods of his opponent from the science of the stars: In his judgment the argumen-

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[42] Ibid., fols. 13 r. — 13 v.

[43] Ibid., fol. 13 v.

science — he speaks of *Az-zīǧāt* — are mere extracts from extracts from extracts. Contrary to the modern conception, science, for al-Kindī, is not progressing and expanding, but gradually vanishing and decreasing. The greatest amount was understood and taught in the beginning. But later generations could not retain most of it and made themselves extracts: First the book *Al-arǧabhar* and its *Commentary*, which comprised a mere thousandth part of the original store of knowledge; and then the book *Al-arkand*, which was just a thousandth part of the preceding one. Finally the *Zīǧāt* were extracted from the book *Al-arkand* and PTOLEMY's *Almagest*.

In his critique al-Baġdādī remarks that what is known about the original great treasure of the science of the stars is too obscure for him even to deny it. But his conclusion concerning the usefulness of this science in his day is all the more poignant:

> If that is true what Yaᶜqūb has said about the vanishing of what has vanished from the science of the stars and about its faultiness, then indeed it is more fitting to abandon and avoid it than to make use of it.[40]

Moreover, al-Baġdādī cites an even more destructive tradition from ᶜAlī. Interestingly enough the story starts with an affirmation by the Prophet's son-in-law that the science of the stars has a solid foundation (= *aṣl*), although he is elsewhere reported to have rejected astrology.[41] He justifies his position by referring to the story of the prophet Yōshuᶜa b. Nūn. To convince his people of the validity of his prophetic message — nothing further is said about its contents — God allowed him to take them up to the top of a mountain where some stagnating, but clear, water was left behind from the rain. Sun, Moon and stars were then ordered to pass through that clear water; by that means Yōshuᶜa taught his people the beginning and the duration of creation.

Then, however, this same story is used to prove that after David no reliable knowledge can be deduced any more from the courses of Sun, Moon and stars. "Duration of creation" is obviously identified with the lifespan of every individual. For the knowledge of "the duration of creation", passed on to later generations, caused grave problems for David: To save true religion he waged war against the descendants of Yōshuᶜa's people who, still or again, are guilty of *kufr*. However, in

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[40] AL-ḪAṬĪB: *Risāla* fols. 14 v. — 15 r. AL-KINDĪ's book *Al-adwār* is apparently no longer extant.

[41] Ibid., fol. 9 v.

the Zodiac they indicate such and such. — We respond: This is not denied, if God Most High, or His messenger, has informed us of that matter. But if nothing is said about it, we do not grant it. And we only grant (to be such) what the law (of revelation) has granted, or on what such a consensus has been reached by the community.[37]

A text like this allows only one conclusion: Only explicit texts in Qur'ān, Ḥadīṯ and the agreement of the community can be cited as proof for an ascertainable correlation between the stars, or other natural phenomena, and man's life or death. But there is no basis in nature itself to make any assertion about such a correlation. The above statement linking the rise of the Pleiades with the disappearance of disease is such an authenticated Ḥadīṯ. Therefore it does not create a problem for the Muslim scholar. But it also does not provide a basis for an independent science of the stars, or the cosmos, presupposing generally valid laws of secondary causation.

The preceding examples can hardly be interpreted as exclusively referring to the foreknowledge of future events and active influences of the stars on man's world, both so characteristic of astrology.[38] Moreover, if the science of the stars is considered trustworthy only when it is applied to precedence cases mentioned in the Qur'ān or the other authoritative sources of Islam, then al-Baġdādī is truly the forerunner of as-Suyūṭī. To assert that in his *Risāla fī ʿilm an-nuǧūm* he accepts astronomy and rejects judiciary astrology does not do justice to the peculiar attitude of this treatise and is, therefore, misleading.[39] The significant rift is not between astronomy and astrology, but between what the authoritative sources of Islam mention and about what they say nothing.

Al-Baġdādī betrays his true attitude in the passage where he discusses the usefulness of the astronomical books of the Indians, the Babylonians, the Egyptians and the Greeks. One instance is his critique of a passage in YAʿQŪB B. ISḤĀQ AL-KINDĪ's book *Al-adwār*, where "the philosopher of the Arabs" defends the reliability of the science of the stars by suggesting excuses for its obvious errors. To underscore the respectibility of this science he gives a brief account of its history. The gist of it is that the contemporary handbooks of the practitioners of this

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[37] Ibid., fol. 8 v.

[38] Cf. the systematization of the Iḫwān aṣ-Ṣafā' described in M. ULLMANN: *Die Natur- und Geheimwissenschaften im Islam* 277, n. 1.

[39] Ibid., p. 275.

turned to al-Baġdādī's treatise which is so negative in its judgments concerning the influences of the stars on earthly events that even the bases for any astrological calculations are rejected. And the permissible branch of the science of the stars seems to be too narrowly defined to allow for causal influences of the celestial bodies on the conditions of health on earth. Of course, the statement could also be interpreted in a way that would make the rising of the Pleiades a mere occasion for the disappearance of disease; but even then the problem remains.

The correlation between the disappearance of disease and the rising of the Pleiades occurs in al-Baġdādī's treatise in two traditions right after the enumeration of the lunar stations, the signs of the Zodiac and the planets. The two verbs used, *irtafaᶜat al-ᶜāhā* and *taḏhaba al-ᶜāhā*, do not seem to denote a causal connection between the Pleiades and disease, but the causal nexus could well be understood. It is definitely not explicitly denied, as that between the *Anwā'* and rainfall later on in the text.[35]

Moving on to the forbidden branch of the science of the stars, al-Baġdādī reveals his awareness of the problem: The eclipses of Sun and Moon, feared as preceding the death of important people by the early Arabs as in other cultures, are said to be determined by the Creator. He has arranged the courses of the two celestial bodies in such a way that eclipses come about at their conjunctions and oppositions. But the Prophet is also reported to have spoken of the eclipses in a form that seems to imply a causal influence issuing from a celestial body. In any case, al-Baġdādī here uses the noun *sabab* (= cause). And he explains: "Something is denoted with the name of another thing when that one is its cause."[36]

The question of causality in nature is also raised in connection with a tradition relating that the Prophet linked a strong wind to the death of a great *Munāfiq*. This tradition seems to make it clear that a causal nexus between a phenomenon of nature, such as the strong wind, and man's life on earth, or the foreknowledge of its end, was explicitly confirmed by the Prophet himself. The following is the solution to the problem of all such cases in al-Baġdādī's view:

> If one should say: You cannot deny that God has established signs and indications on the stars, so that at the setting of some signs of

[35] Ibid., fol. 6 v.; cf. below pp. 55f: Ibn Abī d-Dunyā: *Kitāb al-maṭar;* ms. Istanbul, Köprülü K. 388, 3; fols. 61 v and 62 r.

[36] Al-Ḫaṭīb al-Baġdādī: *Risāla* fol. 8 r.

inspiration for him in the formal sense. Right from the outset al-Ḫaṭīb al-Baġdādī distinguishes between an acceptable branch of this science, which is altogether rooted in Qur'ān, Sunna, and Āṯār, and another that has to be rejected:

> Much of that (i.e. the science of the stars) already occurs in the book of God Mighty and Glorious, the traditions of the messenger of God (God's blessings and peace be with him!), the narratives of the companions and the followers, and the scholars following after them.[32]

The "much" in the preceding statement obviously refers to the acceptable branch of the science of the stars; by implication it seems to allow for real advance in knowledge within this branch, which one may be tempted to identify with the respectable science of astronomy. But this would be a misunderstanding because al-Baġdādī clearly describes the parts of the acceptable science of the stars, among which he mentions:

> The science of star nomenclature, the appearances (*manāẓir*) of the stars, their risings and settings, their courses, their guidance, the transfer of the Beduins from their watercourses or wells according to their (i.e. the stars) times, their selection of times for their young cattle, the fertilization by their male animals, their knowledge of the rains according to the varying stars, their methods of telling the good from the bad, the finding of the direction of the *Qibla* through the stars, the knowledge of the fixed times of prayer and the hours of the night by the appearances and settings (of the stars).[33]

The scope of this science of the stars in al-Ḫaṭīb al-Baġdādī's view becomes clearer when the various texts from Qur'ān, Sunna and Āṯār quoted in its support are examined, especially the one single statement to which as-Suyūṭī refers in his *Al-hay'a as-sanīya*. He mentions al-Baġdādī's treatise along with those of several other authors, perhaps to have this statement confirmed by as many trusted authorities as possible. He may have accepted it only with hesitation because it seems to ascribe a causal influence to a constellation, which seems hardly reconcilable with the monotheistic principles: "When the asterism (on the margin: Pleiades) rises," the Prophet is supposed to have said according to Abū Hurayra, "disease is taken away from the people of every land."[34]

It is ironic that as-Suyūṭī, for confirmation of this correlation between the rising of a constellation and the disappearance of disease,

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32 Ibid., fol. 2 r.

33 Ibid., fol. 2 r.

34 Ibid., fol. 3 r.; cf. fragment IV,49.

1) Why did he consider it necessary to compile such a singular book that displays a rather peculiar attitude to knowledge? and:
2) From where did he take his materials?

The second question can be easily answered because he does not claim to have developed one single theory found in his treatise. He borrows all his cosmological fragments from authors whose names he mentions carefully and conscienciously. But the first question, obviously, is more difficult to answer. We searched for answers in the text of the work itself, in the biography of its author, and the reaction of a contemporary reader as evidenced by a textual addition in one of the manuscript copies. However, these answers were just glimpses which shed light on particular aspects of the question. They failed to reveal the entire range of as-Suyūṭī's attitude to the science of the cosmos (*al-hay'a*) and the deeper reasons for it. As in the case of the second question, the most satisfactory answer is probably found in the works of the earlier authors whom he quotes.

1. AL-ḪAṬĪB AL-BAĠDĀDĪ's *Risāla fī ᶜIlm an-Nuǧūm*

One author whom as-Suyūṭī trusts enough to draw on one of his works as source for his own *Al-hay'a as-sanīya* is AL-ḪAṬĪB AL-BAĠDĀDĪ. This scholar lived in the eleventh century (d. 463 H./1071 A.D.) and is thus one of the sources closest to as-Suyūṭī's times. He was renowned as a learned authority in Ḥadīṯ and as the author of a voluminous history of his home-town. He also wrote a treatise on *"The Science of the Stars."* This rather vague translation of *ᶜilm an-nuǧūm* is used on purpose here and henceforth; for, a clear-cut distinction between astronomy and astrology is not only foreign to the text itself, but also obstructs an objective understanding of the real significance of its purport. This book still attracted the attention of a reader like as-Suyūṭī some four centuries later.

The *Risāla fī ᶜilm an-nuǧūm* is extant in a single manuscript copy now kept in Süleymaniye Kütüphanesi in Istanbul.[31] As far as I know, it has never been published or translated; but it has been described and quoted by a number of authors, although not always correctly. Its importance for the present study lies in the influence it may have exerted on the development of a *hay'a sunnīya*. For, even though as-Suyūṭī quotes this treatise only once, it may well have been the chief source of

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[31] Aşir Ef. 190.

The preceding examination of the application of the ship analogy to possible cases of relative motion, although limited at its base and in its scope, has shown that scholars contemporary with as-Suyūṭī were still open to new ideas. It became obvious that even the most common notions in astronomy and geography could be shattered through more critical reasoning, more assiduous observation and new experiences. Al-Ǧurǧānī and Ġars ad-Dīn may not have added much to Quṭb ad-Dīn aš-Šīrāzī's arguments, but they must have understood their import. The same can be said of the person who made the above-mentioned addition to Princeton 991.

This addition does not fully explain why the *Hay'a as-sanīya* was compiled at that time. But it enhances the contrast: At a time of most innovative ideas and unexpected discoveries this work staunchly re-emphasized the cosmological views of the early Muslim scholars and gained wide popularity. Contemporary astronomers who had been reared on Ptolemaic principles and theories were able to break with tradition and to reject even the basic notions, while here early Muslim traditions were re-instated. The rift was so deep that it could not be healed, one side had to be eliminated.

It would be quite wrong, however, to make as-Suyūṭī the figurehead of a theological rejection of the natural sciences. Theology had become affected with the same stagnation that stifled scientific thought. His work merely represents the general tendencies of the period, and for this reason probably became so successful. These were uncertain times: After the invasions of the Mongols in the East, the loss of Spain in the West, and the expansion of the Turkish power in the Middle East, the new forces sought legitimation, the old ones security in the traditions of the community. In this situation new discoveries, revolutionary ideas, progress, were out of place; but as-Suyūṭī's turn back to the attested cosmological views of the revered forefathers won the day.

II. The prehistory of the *Hay'a as-Sunnīya* in the period between the 9th and the 11th century A.D.

As-Suyūṭī's immediate sources

In order to understand the significance of AS-SUYŪṬĪ's *Al-hay'a as-sanīya* among other contemporary or earlier books on the same subject, two essential questions must be answered:

movement of someone resting on the ship by the ship, i.e. the movement of someone, who is stable, on account of the movement of his place. For that is peculiar to the motion along a straight line, not to local motion.

Otherwise it would be necessary that the elements move with the movement of the sphere of the Moon, and that the sphere of the Moon moves with the movement of Mercury, and on this pattern up to Saturn. But that is rejected by all. Thus we have fixed the axis of the one contained through two points of the containing sphere. For the ninth sphere moves the sphere of the Moon by congruity, i.e. between the two there is a fixation.

But it is not possible that this is the case in the spheres surrounding the earth, namely through the movement of the center of what is surrounded. For that (center) is like a part of the surrounding sphere. Otherwise, it would be necessary that the eccentric of the Sun is moving by the movement of the Moon's sphere, because the center of the Sun's eccentric is located inside the sphere of the Moon. And if it is moving by its soul endowed with will, so that it is made able to set its sphere in motion, and whatever is in that, I have already, in the previous thesis, explained what is in it.

Also, in this way, there is no need for the ninth sphere regarding the possibility of itself being in connection with the whole eighth sphere and causing it to move with the first movement. But, there is also no need for the eighth, since it is established — following the rule mentioned in the first chapter of the *Almagest* — that in the heavenly spheres there is no excess which is not needed. People have observed it with respect; so why is it here abandoned?[30]

In the continuation of his treatise, however, Ġars ad-Dīn himself shows little respect for Ptolemy's principles. As a matter of fact, he rejects such basic notions of Ptolemaic astronomy as the equant and the eccentric deferent. Since he quotes Ibn aš-Šāṭir and Mu'ayyid ad-Dīn al-ʿUrḍī, his arguments against the eccentric deferent may have been developed under the influence of those two innovative astronomers. Yet he also finds difficulties in their theories (fol. 153 r.); and in a later chapter he points out that the observed diameters of Venus and Mars do in no way correspond to the commonly accepted theory. With regard to geography, he is even able to draw on the experiences of navigators who had discovered that "the inhabited area in the region of the North extends to 72 degrees" (i.e. even beyond the tip of Scandinavia! fol. 154 r.).

[30] Ġars ad-Dīn: *Tanbīh an-naqqād* fol. 148 v.

it would be necessary that the big one would fall down on the western side of the small one. But the actual fact is different.

We respond: There is no difference between the moving influence on the big one and that on the small one, as far as accidental motion is concerned. For that is in the measure of the essential movement, regardless whether the thing moving accidentally is big or small. But the difference between the two is rather in the forced movement, namely because of its existence. — That is to say: It is not possible to ascribe the first movement to the earth — not because of what is affirmed, but because it (i.e. the earth) is the very principle of attraction in a straight line, by nature, as is seen in the case of its parts that are separated from it. So it is necessary — as is established in natural science that it (i.e. the first movement) moves in a circular way by nature.

For several centuries the analogy between the ship and its passengers gliding along on a river and conversely the earth with all its inhabitants, and possibly celestial bodies and spheres, rotating around the axis of the universe apparently remained a hotly discussed issue. It was still stirring the minds of scholars around the time the *Kitāb al-hay'a as-sanīya* was composed and circulated. This can be inferred from the fact that a generation after as-Suyūṭī the Syrian astronomer Ġars ad-Dīn b. Aḥmad b. Ḫalīl al-Ḥalabī, who according to H. Suter died in the year 971 H./1563 A.D.,[29] devoted an entire chapter of one of his treatises to this subject. This treatise bears the title: *Tanbīh an-naqqād ʿalā mā fī l-hay'a al-mašhūra min al-fasād* (= A Note of the Reviewer Concerning the Incorrectness in the Well-known Astronomy). According to the colophon at the end of the text it was written in the year 958 H./1551 A.D..

The title indicates that it, too, is the work of an author who was dissatisfied with the predominant, the "well-known" astronomy. Yet, in the chapter in which he discusses the concept of accidental motion as applied to the celestial bodies and spheres he eagerly defends the old theory against a newer one that may have attempted to explain the various movements of the spheres on the basis of an all-comprehensive rotation around the axis of the universe. The guiding idea is again the analogy of the ship.:

The second thesis concerns the motion of the containing sphere in relation to the one that is contained: It cannot be accidental like the

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29 H. Suter: *Die Mathematiker* 190, n. 465. Another work of his is *At-taḏkira:* Kütahya, Zeytinoğlu 1757, 9. One ms. copy is kept in Süleymaniye Kth. in Istanbul: Yeni Cami 1181, 16, dated 985 H.; another is in Beirut: Bibl. Or. 235.

however, because of what is said." And the incorrectness is due to the two reasons mentioned, namely the fact of it remaining connected is the reason for the denial, it is not in "because of what is said". And the air with the earth, it is possible that the air follows the earth with whatever is connected with it (i.e. the air), as stones, arrows, birds, and other things. So these things are connected with the air, moving accidentally as much as the earth moves, and in the same direction. And those parts of the earth that are opposite to it, they do not move away, except through the movement of their souls, when this becomes necessary because of the opposite position coming to an end. This is not necessary in the case of the inert things that were mentioned. For the stone that is thrown up into the air in a straight line does not cease to move parallel to its first place, so it falls down right there. And the arrow, when it moves towards the East or the West, does not abandon its opposite position to the place of its separation, except by the quantity of its motion.

Similarly the ether moves along with, namely the globe of fire with the sphere, as the movements of the comets along with its motion, to wit the motion of the sphere, show. It is not said that the comets sometimes move from the North to the South, or vice versa. But there is no proof for them to be moving congruously with the heavenly sphere as the ether is; rather their movements belong to souls attached to them, moving them sometimes parallel to the equinoctial and sometimes not parallel to it. For we say that the congruous motion of the air is sufficient for us, regardless whether the ether has congruous motion or not.[27]

In the course of this argument AL-ǦURǦĀNĪ finally refers to the result of an experiment with falling stones which is strongly reminiscent of the examples cited in the discussions of "The Second Day" in GALILEO's *Dialogue Concerning the Two Chief World Systems*.[28] But in the *Commentary on the Taḏkira* this defense of congruous motion of the air, and consequently of the rotation of the earth around its axis, is abruptly followed by a renewed affirmation of the stability of the earth at the center of the universe:

If it is said that the congruous motion of the air is refuted because —in the case it would be congruous to the earth — two stones of different sizes, as a small one and a big one, when thrown up into the air would not fall down to the earth along a single line, as a Meridian line on that line. For the moving influence of the air on the big one would be less than its moving influence on the small one. So

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[27] Cf. ARISTOTLE: *Meteorologica* II, 4-361 a 24: Air follows the heavens.

[28] See: GALILEO GALILEI: *Dialogue* 186 ff.

AL-ĞURĞĀNĪ then discusses the reasons put forward to refute this theory. In doing so he touches upon a number of ideas concerning relative motion that must have sounded quite unsettling for readers raised in the tradition of Aristotelian physics, Ptolemaic astronomy and common conceptions about the universe. They or similar ones could have occasioned the above-mentioned addition in Princeton 991. Furthermore, they could have caused people fearing for strict orthodoxy to put renewed stress on traditional views. For AL-ĞURĞĀNĪ was a famous and influential scholar also among the theologians. His arguments run as follows:

> This view is refuted by the majority. But they refuted it because of two reasons that are not satisfactory. The author (i.e. AṬ-ṬŪSĪ, the author of the *Tadkira*) alludes to the two, and about the principal one of the two he says: "It is not possible to ascribe the first movement to the earth." — Not, however, because of what is said, namely: This ascription would imply necessarily that a stone thrown up into the air would not fall down to its first place wherefrom it was thrown up in a straight line, but would necessarily fall to a place west of it. For, during the ascent of that stone and its descent the earth has moved somewhat to the East. But the experiment shows that it falls down to the place from which it was thrown up in a straight line. — Or: That ascription makes it necessary that this movement is related to whatever is separated from it, i.e. from the earth, as arrow, bird and the like: Slower, when it happens to move in the direction of its motion, or faster, when it moves in the opposite direction. That is so, because something moving in its direction departs from the place of separation by the excess of its movement over that of (the earth's) movement; and something moving in the opposite direction departs from that place by the sum of the two movements.
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> But, on this supposition, it would be necessary that in the case of the thing separated from the earth no movement to the East should be noticed at all. For, as will still follow, the whole revolution amounts to 24.000 miles, and the day with a night has 24 hours. So, in their view, the earth would move in one hour over 1.000 miles, and in the tenth part of an hour 100 miles. But among the things moving in this lower world there is none that moves that far in such a time. So something moving towards the East would certainly fall behind in relation to the place where its separation from the earth occurred. Therefore it would be necessary that one sees it moving towards the West.
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> For, the fact of it being connected with the earth, that is the reason for the negative statement, which there is in his saying: "Not,

As regards the above-mentioned variant in Princeton 991, the most relevant passage in AL-ǦURǦĀNĪ's *Commentary on the Taḏkira* is that in which he discusses the motion, or rather immobility, of the earth on the basis of the ship analogy. The root of the whole discussion, in al-Ǧurǧānī's work as well as in that of his predecessor aš-Šīrāzī, is without doubt the rather superficial chapter seven in the first book of PTOLEMY's *Almagest*.[26] In it an ancient theory of the earth revolving around its own axis is summarily rejected, but without taking the example of the ship for relative motion into consideration. Al-Ǧurǧānī, too, does not depart from the traditional view of the earth remaining stable in the center of the universe. But inspite of his cautious argumentation it is evident that it is precisely the analogy of the ship that takes him into unfamiliar and dangerous waters. For the suggestion that not only the air, but also the ether may rotate congruously with the earth could lead to an entirely new cosmological model.

AL-ǦURǦĀNĪ starts his discussion with a review of the theory of some ancient astronomers left anonymous that the daily motion of the stars is due to the rotation of the earth around its own axis:

> Take notice also of the following theory of a group of ancients: They saw the stars moving with one fast motion towards the West and with numerous slow motions towards the East. They were convinced that there could not be a single body that was moving at one time in two directions, regardless whether the two motions were essential ones or accidental ones, or one of the two was an essential one and the other an accidental one. So, since it was not possible for them to ascribe the slow motions to the earth because of their number and difference, they ascribed the fast daily motion to it.
>
> Hence they were of the view that the earth was moving with that motion from the West towards the East, and that on account of that the stars appeared to be rising and setting. When it is thus moving and the stars are motionless, or also moving in that direction, but with a motion that is part of its motion, there undoubtedly appear to us every hour stars which were hidden from us because of the curvature of the earth on the eastern side, and such as are hidden from us through its curvature on the western side that were visible to us there. So the illusion arises that the earth is at rest, while the stars are moving with that fast daily motion in the opposite direction of its motion. It is like the illusion that a ship sailing on water is motionless, while the bank is moving in the opposite direction of that in which the ship is moving.

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[26] See: PTOLEMÄUS: *Handbuch der Astronomie* I, 18 ff.

is best known as the author of the philosophical book *Ḥikmat al-ᶜayn* in which he discusses the question of the earth's motion.[22]

QUṬB AD-DĪN AŠ-ŠĪRĀZĪ (d. 710 H./1311 A.D.), another astronomer at the Marāġa observatory, gave extensive consideration to the implications of this kinematic model. As a matter of fact, their most thorough discussion I came upon in my research is found in the beginning of his book *Nihāyat al-idrāk fī dirāyat al-aflāk*.[23] He systematically applies the model of the ship's motion, relative to the shores and whatever is connected with it, to the problem of the movements of the spheres or the earth. In the process he seems to raise more questions than he solves.

We come closer to as-Suyūṭī's time with the work of the famous all-round scholar ᶜALĪ B. MUḤAMMAD AS-SAYYID AŠ-ŠARĪF AL-ĞURĞĀNĪ (740-816 H./1339-1413 A.D.).[24] In his commentary on AṬ-ṬŪSĪ's *Taḏkira* he time and again refers to the model of the ship, either in relation to the shores, or the sailor moving around on and together with the ship. Thus he exemplifies the statement "Or whether it is moved as regards the place that belongs to it by nature" by the comparison: "Like the surrounding sphere for the surrounded, like the ship for its passenger." And later on: "And accidental movement, like that of the passenger on the ship."[25]

A comparison of al-Ğurğānī's arguments with those of Quṭb ad-Dīn aš-Šīrāzī reveals that they are almost entirely borrowed from the latter author. But because of less distance in time, and greater accessibility of his work, al-Ğurğānī is more likely to have influenced as-Suyūṭī's contemporaries. Al-Ğurğānī's arguments are therefore presented in some detail in what follows. For, unlike those of aš-Šīrāzī, they have never been made known in translation.

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22 Cf. A. SPRENGER: *"The Copernican System of Astronomy among the Arabs"* 189. — The text is now accessible in AL-KĀTIBĪ: *Ḥikmat al-ᶜayn* 551 ff.

23 Maqāla 2, chapter 1; Köprülü Kth. in Istanbul has two manuscript copies from the author's lifetime: K. 957, dated 681 H., and K. 956, dated 683 H. — The part of interest here was translated by E. WIEDEMANN, in: *"Über die Gestalt, Lage und Bewegung der Erde sowie philosophisch-astronomische Betrachtungen von Quṭb Al Dīn Al-Schīrāzī"* 395-422.

24 H. SUTER: *Die Mathematiker* 172, n. 424. But there are many more copies of his *Commentary* extant. The title of his *Commentary* is usually given as *Šarḥ at-taḏkira an-naṣīrīya*. I am grateful to the authorities of the Library of the Ministry of Information in Kabul for a microfilm of its treatise *Kitāb ᶜilm hay'a wa falakīyyāt* which turned out to be a late copy of al-Ğurğānī's *Commentary*. With the help of the copies in the libraries of Istanbul I could identify it (especially Köprülü O. 927,2, dated 842 H) and have used it for my research. Unfortunately it does not have any pagination so that no definite references can be given.

25 Regarding the background of these arguments, it is noteworthy that AL-IĞĪ uses very similar ones; cf. his work *Mawāqif fī ᶜilm al-kalām* VII, 147 ff.

movements of the heavenly bodies and those of ships and their passengers is found already in ancient astronomy and cosmology,[19] it was apparently employed in a more technical and kinematic sense by some astronomers or philosophers associated — in one fashion or the other — with the Marāğa observatory and its scientific heritage.

The systematic investigation of this problem apparently took its departure from Aristotle's analysis of motion in his *Physics*, where he writes:

> Now of things that cause motion or suffer motion, to some the motion is accidental, to others essential: thus it is accidental to what merely belongs to or contains as a part a thing that causes motion or suffers motion, essential to a thing that causes motion or suffers motion not merely by belonging to such a thing or containing it as a part...
>
> It would seem that in animals, just as in ships and things not naturally organized, that which causes motion is separate from that which suffers motion, and that it is only in this sense that the animal as a whole causes its own motion.[20]

Obviously, in this discussion of accidental motion Aristotle is almost exclusively preoccupied with the dynamic aspects of motion. Thus even in the case of the ship he primarily considers the cause of the motion, not its relativity. When the Aristotelian notions developed further, there apparently occurred a marked shift away from the dynamic approach and towards a more kinematic one. The Muslim astronomers of the 13th-16th century continued to use the same terms as the Greek philosopher, but they were now placed into the framework of relative motion: The ship in relation to its passengers or the shores.

Since so few of the medieval texts on astronomy are as yet accessible to the modern student, it seems impossible at present to decide when the analogy of the ship was used for the first time in a more kinematic discussion. Naṣīr ad-Dīn aṭ-Ṭūsī (d. 672 H./1274 A.D.) — as far as I can judge — did not yet draw on it in those passages of his *Taḏkira* in which he explains accidental motion. But the contemporary philosopher ʿAlī b. ʿUmar b. ʿAlī Nağm ad-Dīn al-Kātibī al-Qazwīnī (d. 675 H./1277 A.D.) did. According to H. Suter he was an observer at Marāğa.[21] But he

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19 Cf. F. Boll: *Sphaera* 169 ff.

20 *Physics* 254 b 8 — b 30; transl. from: McKeon: *The Basic Works of Aristotle* 363 f. Cf. Galileo Galilei: *Dialogue Concerning the Two Chief World Systems — Ptolemaic & Copernican* 186 ff.

21 H. Suter: *Die Mathematiker* 153, n. 370.

elucidates: "They hold it" (i.e. the earth) "firm, and it is not moved like a ship on the ocean."[17]

It is historically unthinkable that at the time when that manuscript was copied (i.e. 1088 H./1677 A.D.) any reader of as-Suyūṭī's text would have been troubled by Copernicus' or Galileo's views on the movement of the earth and consequently inserted this brief remark. The earliest manuscript evidence in Arabic for an acquaintance with the work of these European astronomers is perhaps the *Risāla tataᶜallaq bi ḥarakat al-arḍ* by MUḤAMMAD B. ᶜABDALLĀH AL-KURDĪ (Istanbul, Izmirli I. Hakki 2026). It is undated, but internal evidence indicates that it was probably composed only in the nineteenth century. As regards the addition in Princeton 991, it gives us an inkling of the uneasiness in the minds of as-Suyūṭī's contemporary intellectuals; probably it is the same uneasiness that causes AḤMAD B. MŪSĀ B. ᶜABDALĠAFFĀR (d. 923 H./1517 A.D.), for instance, to start his treatise *Silk ad-durrayn* (on the movements of Sun and Moon) with an eloquent complaint about the corruptions of the age.[18]

However, the short variant in Princeton 991 gives us a clue not simply because of the idea of the earth being in motion, but rather on account of the image alluded to as its support: The ship gliding along on the ocean. One might be inclined to interpret "earth" in this phrase as "land mass swimming on the sea", not as a planet travelling along in space with its whole mass, like a ship on water, or as rotating around its own axis and thus moving in relation to the fixed stars or to the planets, which themselves have different motions. As a matter of fact, Sūra 16,15 probably occasioned the statement of Ibn ᶜAbbās that provides the context; it conveys a similar image: "And He cast on the earth firm mountains, lest it shake with you." Nevertheless, the addition of the idea of the ship on the ocean in the variant of Princeton 991 remains unexplained.

The explicit use of this image, as well as the uneasiness it apparently cast on the minds of contemporary intellectuals, may be explained by an examination of the astronomical literature of the time. The analogy of the ship, itself floating along on the ocean or a river while carrying sailors that could be seen moving forward and backward as if on stable ground, had by then become a standard theme, a convenient example, in the discussion of accidental motion. Although the comparison between the

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[17] See nr. XI,6: variant 2 of the text edition.

[18] Mss. Istanbul: Carullāh 1483, 1 and Çorlulu Ali Paşa 338,1.

mīqāt-literature.[15] Obviously we must pay close attention to the words of his invective quoted just now. Thus it is noteworthy that he singles out philosophy and logic and fails to mention astronomy, cosmology or *mīqāt*. He associates the former two with the abhorrent *bidaᶜ*, but not the others. This important distinction is usually overlooked when the sciences of the ancients are defined, witness I. Goldziher's above-quoted definition (p. 3f). But it indicates why as-Suyūṭī writes a refutation of logic, while he compiles his own *Hay'a* and reads other authors' *mīqāt*-treatises. Not the subject matter decides whether a science is judged acceptable, as we are inclined to think, but it is the question whether this science had a place among the practices of the early Muslim community. In this framework his *Kitāb al-hay'a as-sanīya* may actually have strengthened the foundations of the sciences of the cosmos, since it frees them from the blame of being completely derived from the works of foreigners, or non-Muslims.

But the original question why as-Suyūṭī composed this particular treatise at that time has not yet been solved satisfactorily. Considering the manner in which he uses old sources, it might be assumed that in the course of his extensive reading as-Suyūṭī found some old books on this subject which he wished to reproduce in a new form and to circulate among the general public. As a matter of fact, as-Saḫāwī accused as-Suyūṭī of having appropriated old books and published them as his own.[16] Some of the sources on which he drew have indeed survived only in a few manuscript copies. At any rate, astronomy had become so well established that as-Suyūṭī, though by no means an expert in the field, borrowed its name for his collection of cosmological traditions.

As shown by the great number of extant copies, it cannot be denied that as-Suyūṭī met a general interest in a collection of the traditional cosmological teachings; otherwise its widespread circulation at that time, depending on painstaking copying by hand, could hardly be explained. In the manuscript copy Princeton 991 a rather intriguing variant is found that may furnish a clue to the common and eager reception of this text. It is not found in the other manuscript copies which I have examined. Therefore I assume that it originally was a marginal note that has slipped into the text itself, or that it was intentionally inserted by a copyist. The context speaks of the earth as being firmly established by the mountains. Going beyond this factual statement, the variant in Princeton 991

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15 E.M. Sartain: *Jalāl al-Dīn al-Suyūṭī* II, 244 f. (Arabic text).

16 E.M. Sartain: *Jalāl al-Dīn al-Suyūṭī* I, 74 f.

> I became skilled in grammar in that I read many books on it, and wrote many explanatory notes about it. I believe that the majority of my contemporaries, and indeed many of their predecessors, have not read the books on Arabic which I have read... Then this zeal was transferred to *fiqh*, praise be to God, and these two are now my best subjects. They are followed by rhetoric, the composition of elegant prose, and the technical aspects of *ḥadīth* (*iṣṭilāḥ al-ḥadīth*). As for *farā'iḍ*, my knowledge of it is no better than that of other scholars. As for arithmetic and prosody, my knowledge of them is slight. As for logic and the philosophical sciences, I do not occupy myself with them because they are *ḥarām*, as al-Nawawī and others have stated, and, even if they were permissible, I would not prefer them to the religious sciences.[11]

Elsewhere he is more self-assertive concerning his knowledge of *farā'iḍ*: Although he concedes that it is not one of his strong subjects, he still feels that he excels in it any of his contemporaries. But he admits that arithmetic (*ḥisāb*) is the most difficult subject for him because for some unspecified reason he finds it burdensome (*yaṯqulu ʿalayyā n-naẓar fīhi wa taḍīqu minhu aḫlāqī*).[12]

Among the many sciences in which as-Suyūṭī claims at least some knowledge he finally also mentions medicine, probably because of his treatise *Aṭ-ṭibb an-nabawī*.[13] However, he did not care to include astronomy or cosmology. His motive for this baffling omission can only be guessed at: He may have tried to avoid giving the slightest impression that he had been dangling after one of those forbidden sciences of the ancients. For his feelings about them did not allow any compromise:

> Know that, from the time I grew up, I have been inspired with a love of the *sunnah* (exemplary practice of the Prophet) and of *ḥadīth*, and with a hate of *bidaʿ* (heretical practices) and the sciences of the ancients, such as philosophy and logic. I wrote on the censure of logic when I was eighteen years old, and it was anathema to me. I never heard a problem related to the sciences of the philosophers but I disliked to hear it, nor of a book on any of their disciplines but I avoided reading it.[14]

Nevertheless, in another passage he brags about having read some treatises by important representatives of the by then highly developed

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[11] E.M. SARTAIN: *Jalāl al-Dīn al-Suyūṭī* I, 33.

[12] Ibid. II, 203 f. (Arabic text).

[13] See note 13.

[14] E.M. SARTAIN: *Jalāl al-Dīn al-Suyūṭī* I, 32 f.

in Greek logic and gradually surrendered to them. For him this is a battle of life or death. Death actually followed, namely of independent research that would submit only to the inner laws of nature or employ the tried methods of earlier scientists regardless of their religious affiliation. With the renewed emphasis on tradition, such affiliation became all-important; and the spirit of science was efficiently stifled.

Among his writings AS-SUYŪṬĪ also lists the title *Al-hay'a as-sanīya fī l-hay'a as-sunnīya,* but only in the category of works that lesser scholars than he himself could have written just as well.[6] It immediately follows that of his Prophetic Medicine *(Aṭ-ṭibb an-nabawī)*.[7] Both works were probably composed for the same reason: The author had never been interested enough in the disciplines of medicine or astronomy to study them carefully and present the results of his efforts in the form of books; yet he wanted to show his contemporaries that he could write about these sciences as well. His aim was to prove that he was the most learned scholar of his century and that he deserved to be recognized as a *muǧtahid* (an independent authority), and even as the *muǧaddid* (the restorer of religion at the turn of every century after the Prophet) of his age. For the same reason he wrote a treatise on logic, his *Ṣawn al-manṭiq wa l-kalām ʿan fann al-manṭiq wa l-kalām*,[8] and he made an extract of Ibn Taymīya's *Naṣīḥat ahl al-īmān fī r-radd ʿalā manṭiq al-Yūnān*,[9] which is actually a refutation of Greek logic. Thus he had shrewdly demonstrated his competence in this science, but without having tarnished the purity of his soul, since his efforts were directed towards guarding the faithful against the devilish instrument.

At the age of fourteen as-Suyūṭī seems to have received some instruction in elementary mathematics from Šihāb ad-Dīn as-Sārimsāḥī, who is said to have been a famous scholar of *farā'iḍ* (i.e. the rules governing the division and distribution of inheritances), arithmetic, and algebra.[10] But as-Suyūṭī's own words show his true appraisal of his competence in these sciences and of their value:

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[6] E.M. Sartain: *Jalāl al-Dīn al-Suyūṭī* II, 112 (Arabic Text).

[7] See: C. ELGOOD: *"Ṭibb-ul-Nabbi or Medicine of the Prophet*. In: Osiris 14 (1962) 33-192.

[8] Cairo, 1366/1947; pp. 1-200.

[9] Ibid., pp. 201-343 (as-Suyūṭī even gave his extract a well-sounding title: *Kitāb ǧahd al-qarīḥa fī taǧrīd an-naṣīḥa.*, The Book of Exertion of Talent in the Abstraction of Good Counsel).

[10] Šihāb ad-Dīn as-Sārimsāḥī died in 865 H./1461 A.D.; cf. E.M. SARTAIN: *Jalāl al-Dīn al-Suyūṭī* I, 27.

number of prospective students of the sciences by offering them a *hay'a*, or even the only cosmology, truly in harmony with their religion.

3. AS-SUYŪṬĪ's *Kitāb al-Hay'a as-Sanīya fī l-Hay'a as-Sunnīya* in the context of contemporary literature

In view of the large number of extant manuscript copies of AS-SUYŪṬĪ's *Kitāb al-hay'a as-sanīya,* there can be little doubt about the popularity of this work. On the other hand, the large number of outstanding astronomical works in Near Eastern libraries of the fifteenth century poses two tantalizing questions: Why was this curious compilation of cosmological traditions made at this time, and why was it so widely circulated?

A single sentence in the beginning of his text informs us about the author's motives for composing it: "It was my goal that those with intelligence might rejoice and those with eyes take heed." — In the absence of further elucidations this point cannot be unduly pressed; but as-Suyūṭī seems to have two groups in mind: Those who are granted possession of the inherited traditional truths, so that this reminder can only renew their enjoyment; and those who are only granted eyes and who are admonished to use them. In fact, the verb employed here *(iʿtabara)* has, in the technical usage of the astronomers, the connotations of observation, experimentation and verification.[5] The question remains, however, what such eyes could do with the ensuing quotations of traditional sayings. But the author must have believed them to be worthy of consideration; otherwise his use of the equally technical term "*al-hay'a*" in the title would not have made any sense.

The author does not even argue that his *Kitāb al-hay'a as-sanīya* is really closer to the Islamic faith than other works; he takes this position tacitly for granted. His attitude may be termed uncompromising, but it is consistent. A person who is convinced of having the truly Islamic *hay'a*, i.e. the explanation of the cosmos and the various natural phenomena that is fully in harmony with revealed knowledge, to the extent of being part of it, such a person cannot help presenting it for unconditional acceptance. Any recourse to arguments would betray his cause, would display a lack of faith. Thus as-Suyūṭī is more consistent than those orthodox theologians who engaged in discussions with opponents trained

[5] Cf. A.I. SABRA: "*The Astronomical Origin of Ibn al-Haytham's Concept of Experiment*" 133-136.

contents of this work its sources — as far as possible — will be pointed out, and it will be supplemented with some of the additional materials derived from other authors who have discussed traditional cosmology. Thus, it is hoped, we will gain access to the literature of the *hay'a as-sunnīya*, astronomy, cosmology or cosmography, on the basis of the Islamic Tradition.

For, even though AS-SUYŪṬĪ's *Kitāb al-hay'a as-sanīya* is also a compilation from earlier books, it is closer to the onset of stagnation in Arabic science. Further, for its time it manifests a certain originality, because it seems to be the first treatise of this genre to use the technical term "*al-hay'a*" in its title. It thus declares itself a rival of other *kutub al-hay'a* based on principles and methods as those employed by Ptolemy. The adjective "*as-sanīya*" (= "brilliant", "magnificent", "glorious", etc.) testifies to the intensity of the challenge.

This text also deserves attention because it sums up the traditional cosmological views passed on to the Muslim literati during the previous centuries of flourishing astronomical studies. But it was not easy to formulate these traditions concisely and to separate them from the theories derived from non-Muslim sources since the former were entangled with an abundance of legal, ritual and religious matters. After the appearance of numerous *kutub al-hay'a*, especially in connection with the highest and most original achievements of Arabic astronomy through the research at the Marāġa observatory, which were openly inspired by PTOLEMY's *Almagest*, here at last was a book exclusively based on the traditional Islamic authorities. As such it may have been able to awaken the contemporary scholars to a consciousness of their Muslim heritage.

Yet, the question remains whether this treatise was effective in driving a wedge between traditionally Muslim and non-Muslim science. Or was its appearance merely a symptom of a rift that occurred at or before this time? At any rate, it must have enjoyed a considerable popularity long after, and far from where, it was composed. For to this day many copies are found in the manuscript libraries of the Middle East, Europe and America, as our survey shows.[4] This fact alone, however, cannot suffice as historical evidence for a satisfactory estimate of the actual influence of this treatise. And a fortiori, it would be rash to consider it a causal factor in the decline of Arabic scientific activities. But there is ground to conjecture that it may have discouraged a good

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[4] See: The description of the manuscripts.

Risālat al-aflāk wa n-nuğūm (= The Treatise of the Spheres and the Stars):Istanbul, Tırnovalı 1232.
Kitāb al-hay'a (= The Book of Astronomy): Konya, Yusuf Ağa 53 = 927. - 8184/1.
Hay'at (= Astronomy): Istanbul, Harput 29/4.
Al-Hay'a al-Karamānī (= The Astronomy of al-Qaramānī): Istanbul, Esad Ef. 3594/2. - Nafiz Paşa 1270.
Tarcamat al-hay'a al-islāmīya li s-Suyūṭī (= The Translation of the Islamic Astronomy by as-Suyūṭī): Istanbul, İbrahim Ef. 465.
HUSAYN MURTAZA NAZMI-ZADE: *Hey'et-i Senīye tercümesi* (= The Translation of the Radiant Astronomy): Istanbul, Bağdatlı Vehbi Ef. 850.
KASIM B. ŠAYḪ ᶜABDUSSALAM: *Hay'et-i Islāmīye* (= An Islamic Astronomy): Adana, İl Halk 297/21.

However, a quick perusal of some of these treatises, kindly made accessible to me in Turkey and in Germany, convinced me that the scopes of these works, and by and large even their contents, are essentially the same. More disconcerting, though probably more representative of the intellectual productivity of the period, was that the author — as he quite candidly admits — took all the materials for his "Islamic Astronomy" from texts of older authorities. And these authorities themselves were compilers belonging to the preceding generation(s), not great independent or original scholars, nor the critical collectors of traditions. Since al-Qaramānī's works are a mere continuation of a movement started by these older authorities, it seemed advisable to turn the focus of attention to their treatises.

2. ǦALĀL AD-DĪN AS-SUYŪṬĪ's *Kitāb al-Hay'a as-Sanīya fī l-Hay'a as-Sunnīya*

Ibrāhīm al-Qaramānī's most important source, of materials and inspiration, was a treatise composed about a century before he started his literary career, namely the *Kitāb al-hay'a as-sanīya fī l-hay'a as-sunnīya* by ǦALĀL AD-DĪN AS-SUYŪṬĪ. This influential work by as-Suyūṭī (849-911 H./1445-1505 A.D.) was known for a long time,[3] but to my knowledge has never been studied. Because of its historical function it deserves to be presented in an edition with a translation. In a commentary on the

[3] See: H. SUTER: *Die Mathematiker und Astronomen der Araber und ihre Werke* 186, nr. 449.

When I examined the holdings of various Turkish manuscript libraries I realized that the Bursa manuscript is not merely the result of an occasional effort by an isolated scholar. While not making an exhaustive search, I came to the conclusion that treatises from his pen, with almost identical titles, as well as Turkish translations and adaptations by other writers may have been among the most popular books of that time. Almost every manuscript library seemed to have a number of copies, as for instance:*

Al-hay'a al-ilāhīya (= The Divine Astronomy): copied 1137 H.: Istanbul, Fatih 3393/1.

Kitāb al-hay'a ᶜalā iᶜtiqād al-ahl as-sunna (sic.) (= The Book of Astronomy Based on the Tenets of the People of Tradition): Manisa, İl Halk K. 759.

Hay'at al-Islām ᶜalā tarīqat ahl as-sunna (= The Astronomy of Islam Based on the Principles of the People of the Tradition): Istanbul, University A. 3584.

Ahl as-sunna iᶜtikādı (= The Tenets of the People of the Tradition): Istanbul, Tırnovalı 1866/7.

Risāla fī l-hay'a al-mabnīya ᶜalā l-aḥādīṯ wa l-āṯār (= A Treatise on the Astronomy Based on the Traditions and the old Authorities): Heidelberg, Cod. Heid. Or. 317.

Al-hay'a al-islāmīya (= The Islamic Astronomy): Istanbul, Esad Ef. 3533/4. - University A. 2952. - Bursa, Genel 9335. - Konya, Yusuf Ağa 4886/13. - 7235/4. - 7249/3. - Kütahya, Zeytinoğlu 1689/1. - 1690. - 4993/9. - Manisa, İl Halk Kth. 297,2 = 927.

Risāla fī l-hay'a aš-šarᶜīya (= A Treatise on the Astronomy in accordance with the Revealed Law): Istanbul, University A. 3778.

Al-hay'a as-sanīya (= The Radiant Astronomy): Istanbul, University A. 1688.

Muntaḫab al-hay'a as-sanīya li s-Suyūṭī (= An Extract of *The Radiant Astronomy* by AS-SUYŪṬĪ): Istanbul, Hacı Mahmud Ef. 5711.

(BROCKELMANN, in his *GAL*, S II, p. 185, mentions still other copies of extracts from as-Suyūṭī's treatise: Br. Mus. Suppl. 1250, III. - Pet. AMK 946. - Kairo[2] I, App. 17. - Qawala II., 271-273).

Muntaḫab kitāb al-hay'a al-islāmīya (= An Extract of the Book of the Islamic Astronomy): Istanbul. Laleli 3324/2.

Aflāk (= Spheres): Istanbul, Tırnovalı 1231/1.

* Authors and titles of manuscripts are written according to the catalogues of the respective libraries.

PART A

A HISTORICAL ANALYSIS OF TRADITIONAL ISLAMIC COSMOLOGY WITH REFERENCE TO AS-SUYŪṬĪ'S *KITĀB AL-HAY'A AS-SANĪYA FĪ L-HAY'A AS-SUNNĪYA*

I. The revival of traditional Islamic cosmology in the fifteenth and sixteenth century

1. IBRĀHĪM AL-QARAMĀNĪ'S *Al-Hay'a al-Islāmīya*

At the very outset of my research my attention was drawn to a manuscript mentioned in AYDIN SAYILI's *The Observatory in Islam.*[1] The title of this manuscript unmistakably points to a treatise that owes its origin to the concern with a truly Islamic science of nature: *Kitāb ᶜilm al-hay'a ᶜalā iᶜtiqād ahl as-sunna wa l-ǧamāᶜa dūn al-falāsifa* (= The Book of Astronomy Based on the Tenets of the People of Tradition and Community, not on those of the Philosophers) by IBRĀHĪM AL-QARAMĀNĪ AL-ĀMIDĪ.[2]

As the *Nisba* shows, the author hailed from the East-Anatolian town Āmida, present-day Diyarbakir. The catalogues of Süleymaniye Kütüphanesi give the date of his death as 1000 H., which corresponds to 1591/92 A.D.. Thus this text belongs to that period of Muslim science which is generally looked upon as its "old" age, the age of advanced decay (i.e. after the closing of the Istanbul observatory, and disregarding such centers of learning as those of Moghul India). It raises the question whether this work reveals some of those factors that caused the decline of the sciences, or — looked at from another angle — whether it exposes features of a distinctly Muslim science, at least in the view of its author, Ibrāhīm al-Qaramānī.

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[1] A. SAYILI: *The Observatory in Islam* 431.

[2] Ms. Bursa: Haraççıoğlu, nr. II-1213.

at all, from the beginning of Arabic science, but that it evolved over the centuries. Reflecting on the period of developing intellectual life the later authors may have taken their contemporary situation of two strictly separated groups of scholars as the norm and projected it into the past. If we take their view at face value, our understanding of Arabic science over the centuries would be equally unhistorical and false, though apparently based on clear distinctions.

The present study is based on hitherto unpublished Arabic treatises that are explicitly concerned with a truly Islamic science of the cosmos *(hay'a)*. They were compiled around the time when decline of the sciences had set in. But the fragmentary theories of the cosmos that are the subject matter of these compilations were inherited from the earliest period of scientific interests in Islamic history; they were systematically collected and injected into contemporary thought between the ninth and eleventh centuries. Modern writers may neglect these traditional treatises as not coming up to their scientific standards. But they are available in numerous copies, just as many witnesses of strong cultural influences. The text edited here forces us to focus on the beginnings and the ending of the Arabic scientific movement, according to W.C. Smith the most favorable periods of research; in addition it poses questions about its relevance in the middle period. Thus it hopefully sheds some light on neglected questions of the history of Arabic science.

versteht man in der Literatur des Islams im Gegensatz zu den Wissenschaften der Araber, zu den neueren Wissenschaften, spezieller zu denen des Religionsgesetzes *(šarīʿa)*, jene Wissenschaftszweige, die durch direkten oder vermittelten Einfluss der aus der hellenischen Literatur übernommenen Werke *(kutub al-awāʾil)* in den Bildungskreis der Muslime eingedrungen sind. Es gehört dazu also zunächst der ganze Kreis der propädeutischen, physischen und metaphysischen Wissenschaften der griechischen Enzyklopädie: die verschiedenen Zweige der Mathematik, Philosophie, Naturkunde, Medizin, Astronomie, Musiktheorie u.a.m.[6]

This clear distinction between the old and the new sciences may be based on the bibliographical need for well-defined classifications. I. Goldziher's frequent references to IBN AN-NADĪM's *Fihrist* are indicative of this. Sharp definitions of the field are an asset for any research, but they must adapt to changing situations over the centuries and not anticipate the findings of the historian. In discussing Arabic science it is often assumed that there always was a division between groups of scholars, corresponding to the bibliographical one, and that they divided their research among themselves accordingly. Thus one expects questions relating to natural phenomena to be dealt with by those scholars who devoted themselves to the *ʿulūm al-awāʾil*, while the others would disregard them as not pertaining to their field of study. It is also not surprising that conflicts are said to have arisen between the two groups, that one was relegated to a marginal place in society when the other gained influence and dominated the former. But, if there was such a struggle, we may also expect that the lines were drawn sharper after one group had gained the victory and through its control over contemporary literature could minimize the role played by the vanquished in the intellectual life of the whole community.

I. Goldziher's is not a historical study of the development of the sciences from their beginnings to the dark times of their decline. But it is easy to misunderstand him in that way. For instance, he also makes no distinction between philosophy and such sciences as astronomy or cosmology, which were to some extent rooted in Qur'ān and Sunna. To deal with the scientific movement as a whole, not just the classifications of a later date, but the earliest available texts concerning natural phenomena must be investigated. It may then well be found that the assumed deep rift between the two groups did not exist, neither so markedly or not

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[6] I. GOLDZIHER: "*Stellung der alten islamischen Orthodoxie zu den antiken Wissenschaften*" 3.

community, the true role they played in its intellectual life, and especially how and why they finally became sterile, all these grave historical problems tend to be neglected. Thus L. Massignon's thesis cannot be expected to furnish satisfactory answers to W.C. Smith's questions.

Smith calls for an essentially historical investigation. He concentrates on attitudes to history in modern Arab writings, hence his statement that the historical aspects of science have hardly begun to be investigated "by Arab minds". He may have extended his judgment if he had focused his analysis on the history of Arab or Muslim science as such. For, with his keen historical sense he would have been aware that non-Arab minds, too, have given little attention to the place of science within Muslim culture. Two notable exceptions are I. GOLDZIHER and more recently M. PLESSNER. The former author dealt with some aspects of this problem, namely the position of orthodoxy regarding the ancient sciences, in his essay *"Stellung der alten islamischen Orthodoxie zu den antiken Wissenschaften"*.[3] And the latter drew attention to the impact of the sciences on the intellectual formation of Islam in his two articles *"Die Geschichte der Wissenschaften im Islam als Aufgabe der modernen Islamwissenschaft (ein Versuch)"*[4] and *"Die Bedeutung der Wissenschaftsgeschichte für das Verständnis der geistigen Welt des Islams"*[5].

The start of the problem is the definition of Arabic or Muslim science. In general science has become such an absolute that it requires the intense work of the historian to show that it, like any other human activity, has a history because it evolves *in* history. And Arabic science, starting with the medieval Arab authors themselves, is almost always treated as a uniform, clearly defined phenomenon. More or less succinctly most authors present the whole scientific movement among the Muslims as *ʿulūm al-awāʾil* (= the sciences of the ancients). Hence the derivation of these activities from the people of former times, the ancient scientists, is the main feature of the definition, not the activities in themselves, their goals or methods. I. GOLDZIHER's description of these sciences, however, concentrates on their subject matters:

> Unter *ʿulūm al-awāʾil* oder *ʿulūm al-ḳudamā* (Wissenschaften der Alten), auch *al-ʿulūm al-ḳadīma,* d.h. die antiken Wissenschaften,

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[3] In: Abhandlungen der königl. preuss. Akad. der Wissensch., phil.-hist. Klasse; nr. 8; Berlin, 1916.

[4] In: Philosophie und Geschichte; nr. 31; J.C.B. Mohr (Paul Siebeck); Tübingen, 1931.

[5] In: Philosophie und Geschichte; nr. 82; Tübingen, 1966. — See also review by B. SPULER; in: Der Islam 48 (1971) 141.

accessible to scholars of all nations, creeds and races, a comprehensive historical study of Arab science, as distinctly Arab or Muslim, can hardly be undertaken at the present time. But the task appears challenging and promising enough that even a preliminary study will have its value. As W.C. Smith suggests, the beginnings and the final stage of Arab science, according to him the most neglected periods, seem to be the most favourable subjects of analysis.

The numerous essays of LOUIS MASSIGNON on the peculiar character of the Arabic language bespeak the very same concern. But more ambitiously, he tries to penetrate to the living roots of the culture itself, to discover in its modes of expression the structures that determine all its scientific manifestations. Here is an example of his method:

> Ce caractère de la langue a eu pour résultat d'infléchir les connaissances qu'elle exprimait dans le sens d'une pensée analytique, atomistique, occasionnaliste et apophtegmatique... L'exactitude que les hommes de science arabes poursuivront, ce n'est pas l'universalisation de correspondances *analogiques* posées *a priori;* c'est le dénombrement des groupes *anomalistiques (shawādhdh)* que leurs observations inlassablement poursuivies, leur permettent d'accumuler.[2]

This brilliant thesis demands our attention; but unfortunately it has remained a programmatic statement and has not yet been put on satisfactory historical foundations. It may well remain so because it may be too ambitious an undertaking. Nevertheless, the reader of the just quoted chapter will notice soon that this thesis has already influenced the analysis of Arabic science. Thus the linguistic factor has been overstressed and the contribution of Muslim culture on a wider scope consciously and intentionally played down.

Swayed by L. Massignon's thesis the reader may conclude that Arabic science had an identity of its own only because of its linguistic garb. Of course, language participates in the processes of history; but if the unchanging factor of language which guarantees its lasting identity is the guiding principle of analysis it is difficult to see how the historical development of science in Muslim culture can be adequately taken into consideration. That scientific treatises were translated into Arabic becomes the primary focus of attention, not when this happened and for which reasons. How scientific activities began in the young Muslim

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[2] *La Science Arabe*; in: R. TATON (ed.): *Histoire générale des sciences;* tome I: *La science antique et médiévale* 458 f. Cf. L. MASSIGNON: *"Les formes de pensée déterminées par la structure de la langue arabe"*; in: *Opera Minora* II, 542 ff.

INTRODUCTION

In his thought-provoking study *Islam in Modern History* WILFRED CANTWELL SMITH singles out the place of science in Arabic culture as a particularly revealing case of neglect or shallowness in Islamic historiography. The author does not deny that plenty of factual knowledge concerning the many contributions of Arabic-writing savants to science has been collected in numerous treatises and articles. But the inner nexus of science with Arab, or Muslim, culture has in his view never been satisfactorily laid bare. He writes there:

> The market abounds with treatises exhibiting, sometimes glibly, sometimes as a result of great labour and research, the Arab (or Muslim) contribution to science in general or to this or that particular branch. At a more superficial level of factual knowledge, the case is emphatically urged that Western science is essentially a borrowing from the Arab (Islamic) world. At a more abstract level, the thesis is ardently presented that Islam as a religion, far from being in conflict with science, encourages and nourishes it.
>
> Much of this, though complex, is true. More important, all of it is satisfying. Yet equally important, little of it is effective. For there has been, along with this voluminous output of applause, extremely little investigation by Arab minds of the actual factors leading to the development of early science in Arab classical culture, the role that it played in the society, and the objective relations, either social or intellectual, over the various centuries between the scientists and the religious authorities. Great attention is called to the fact that Arab science existed. Little thought is given as to just how it arose, or what it implied. And so far as the present writer is aware, there has been virtually no study at all of the obviously crucial question as to how or why Arab science declined.[1]

Since few treatises of Arab scientists, especially of philosophers or theologians discussing scientific problems, have been published and made

[1] W.C. SMITH: *Islam in Modern History* 123 f.

Desirous to proceed further, but held back because superhuman efforts would be required to penetrate into such pathless territory.

Many people devoted to scholarship have helped me along the way; their list would be too long if I tried to thank them all by name. But I must mention the professors at Harvard University who made it possible for me to work jointly in the departments of History of Science and Near Eastern Languages and Cultures: E.N. Hiebert, M.S. Mahdi, J.E. Murdoch, W.C. Smith, and A.I. Sabra. The latter acted as my adviser over the years; I am obligated to him for opening this line of research for me and for his encouragement throughout the work. Prof. A. Schimmel kindly read the first draft of my book and helped me to solve many problems. Prof. I. Lichtenstadter let me benefit from her wide knowledge of early Islam and gave me much of her time to improve my English style.

While collecting the sources for my edition and background-studies I received the very kind help of the authorities of many libraries and their assistants. First of all I must mention the great libraries in Istanbul, Bursa, and Konya, where I was allowed to collate a good number of manuscripts. I received microfilm-copies also from the manuscript libraries in Cairo, Damascus, Heidelberg, Kabul, Leiden, München, and Princeton.

For valuable comments on the completed work and encouragement towards its publication I am grateful to Professors H. Daiber, D. King, and G. Saliba. Special thanks are due to Prof. Dr. U. Haarmann, the former director of the Orient-Institut of the DMG in Beirut, who accepted my "Islamic Cosmology" for publication in the series "Beiruter Texte und Studien". And I thank Dr. G. Rotter, the present director of this institute, for encouragement in the long months during which the bullets of fighters and snipers delayed the publication. Dr. B. Kellner-Heinkele kindly agreed to supervise the printing of the book in the final phase; I am very grateful for her care and concern. I feel unable to render appropriate thanks to the staff of the Imprimerie Catholique who continued their work on my "Islamic Cosmology" even when they were constantly threatened by the guns just across the notorious "Green Line".

وٱللَّهُ شَكُورٌ حَلِيمٌ [S.64,17]

Beirut, December 1981 ANTON M. HEINEN

PREFACE

As-Suyūṭī's treatise *al-Hay'a as-sanīya fī l-hay'a as-sunnīya*, whose edition and analysis was proposed to me for my doctoral dissertation in the history of science at Harvard University, wants to be the Islamic cosmology. The title I have chosen for the revised version of my work only intends to echo the original claim of the author. Anyone familiar with the Arabic literature in this field will know that a single "Islamic Cosmology" can hardly be written, certainly not in our time while the great majority of relevant texts is still inaccessible. Moreover, it can be safely said that such a single "Islamic Cosmology" never was a reality in Islamic intellectual history. There were numerous theories, models, schools of cosmological thought. And even as-Suyūṭī's treatise is obviously an aggregate of various, sometimes contradictory, fragments of cosmological models.

But it is nonetheless inspired by the ideal of unity and the claim that there is a distinct "Islamic Cosmology" identifiable and presentable as such. For this reason the treatise was widely circulated among as-Suyūṭī's contemporary Muslim scholars, and it deserves our attention since it is bound to shed a good deal of light on the thorny problem of the integration of the natural sciences into a professedly Muslim culture. This work therefore serves a genuine historical interest, although it contains few "scientific achievements" which apologetic-minded authors might insert into their collections of precocious inventions and glorious contributions to science.

My analysis and commentary stay necessarily within the limits of as-Suyūṭī's text. Numerous other literary products containing similar or even identical materials, such as *Adab*-works, poetry, Tafsīr-books, Ḥadīṯ-collections, Ṣūfī-treatises, Kalām-discussions, etc. had to be left aside. And when trying to trace the sources of as-Suyūṭī's cosmological fragments, and then in turn to establish their particular scientific meaning, I often felt like the discoverer of the Nile-source (see XIII,3):

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with critical edition, translation, and commentary

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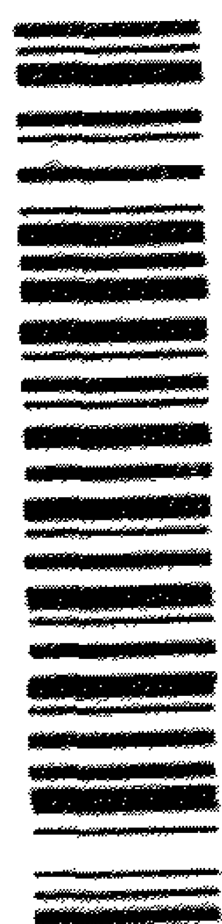
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